V0.1 | FREE | MARS ROBERTSON | SUPPORTING EXTINCTION REBELLION

SYSTEM CHANGE

ACTIONABLE POLICIES TO HANDLE CLIMATE EMERGENCY

INFORMATION ALWAYS WANTS TO BE FREE
PLEASE SHARE IT WIDELY: GENESIS.RE/BOOK

0. Intro

Technical note about this book

Initially, it was a collection of Google Docs.

I couldn't stop thinking about it and I was constantly adding new stuff, more content, more links, research, data, studies, ideas… Sometimes a document grew out of control, contained so many side notes and a new separate one was created.

Now doing this process in reverse - putting it all back together in a single form, Kindle form, Kindle because Amazon is an amazing distribution platform.

Even if you do not have a Kindle device, you can install the Kindle app on your phone, tablet or a computer. Actually, with some images having a color screen might be better than e-ink.

If there is a URL in the text - I encourage you to click and see for yourself - if the URL is in the footnote - it's entirely up to you, always DYOR (do your own research).

You can also download .pdf or .epub whatever you prefer. No DRM *(digital rights management)*, use any format you like and share widely

In the footer of all Google Docs I put the following, this principle remains true here as well:

> *"Creative Commons - Open Source - MIT - WTFPL - Cognitive Liberty - Freedom of Thought - Freedom of Conscience"*

I'm not too bothered if this is Creative Commons version 3 or version 4. No strings attached - my goal is to spread the knowledge, information always wants to be free.

No person should ever be prosecuted for their thoughts.

I am currently based in a surveillance state where people are prosecuted for possession of books. Media feed us with terror and Terrorism Act[1] is making *Nineteen Eighty-Four*[2] and thoughtcrimes a reality.

I hope you will find it useful, helpful, informative. I'm pretty sure you'll learn something new...

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[1] https://genesis.re/wiki#Terrorism_Act
[2] https://en.wikipedia.org/wiki/Nineteen_Eighty-Four

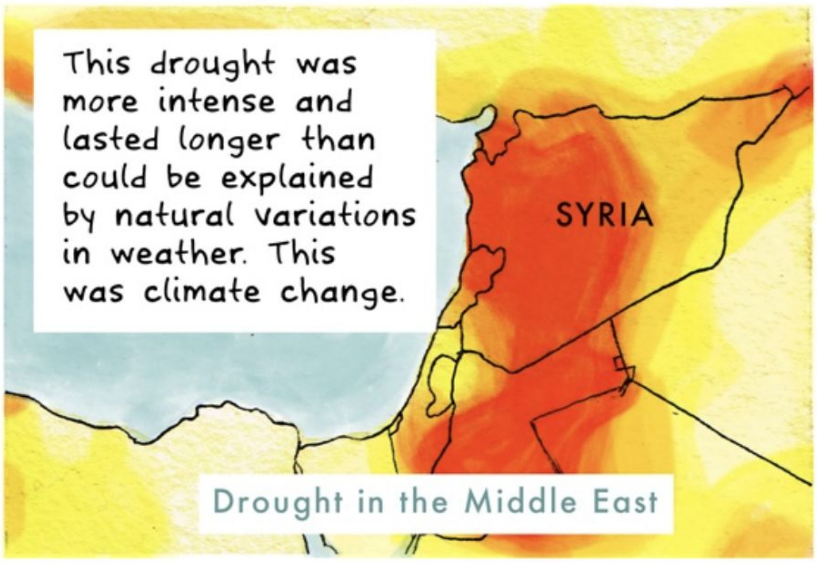
How did my environmental activism journey start?

It was 2015 when I became obsessed with climate change. It was the wedding of my cousin and me watching the TV in a hotel room in a foreign country. The majority of the adverts *(this is how I learn about the economy)* were about vitamins, supplements and pharmaceutical drugs… You could get sick just by watching all the symptoms! In between the adverts, all of the news was talking about this little guy:

Did some research, wrote a blog post[3]. You should check this amazing comic strip[4], unfortunately no longer online, preserved in archive.org

[3] https://blog.mostlydoing.com/2015/11/syria-climate-change-global-warming.html

[4] https://web.archive.org/web/20151222223453/http://www.upworthy.com/what-is-the-role-of-climate-change-in-the-conflict-in-syria



That's how it started…

Here is me at COP24[5] (2018 United Nations Climate Change Conference):
https://genesis.re/360/cop24/

I've asked 10+ random people and no one knew how to measure emissions:
https://earthscience.stackexchange.com/questions/15774/what-are-the-technical-solutions-to-measure-ceco2-emissions

No one knew the answer, they just assumed the data is correct. Seriously?

I saw how the politics is made, to create a global political party would be too slow.

[5] https://en.wikipedia.org/wiki/2018_United_Nations_Climate_Change_Conference

It’s the Extinction Rebellion that gave me hope.

Previously I wasn’t into protesting, I was into finding solutions.

And as of 2019 and I am realizing protest (non-violent direct action) is a very efficient way.

It was the collective assembly that changed my mind… I might be smarter than the average person, but I’m not smarter than everyone and I’m definitely not smarter than everyone else combined.

The hive mind, collective consciousness, the energy in the movement is unprecedented.

This book is my contribution to the movement.

(and the survival of me and my very own family)

3 demands and 10 principles of Extinction Rebellion

There is a wealth of information available online: https://rebellion.earth/the-truth/about-us/

I find these principles worth sharing. It helps align our efforts.

I agree with the principles:

1. We have a shared vision of change.
Creating a world that is fit for generations to come.

2. We set our mission on what is necessary.
Mobilising 3.5% of the population to achieve system change - using ideas such as "Momentum-driven organising" to achieve this.

3. We need a regenerative culture.
Creating a culture which is healthy, resilient and adaptable.

4. We openly challenge ourselves and our toxic system.
Leaving our comfort zones to take action for change.

5. We value reflecting and learning.
Following a cycle of action, reflection, learning, and planning for more action. Learning from 6. other movements and contexts as well as our own experiences.

6. We welcome everyone and every part of everyone.
Working actively to create safer and more accessible spaces.

7. We actively mitigate for power.
Breaking down hierarchies of power for more equitable participation.

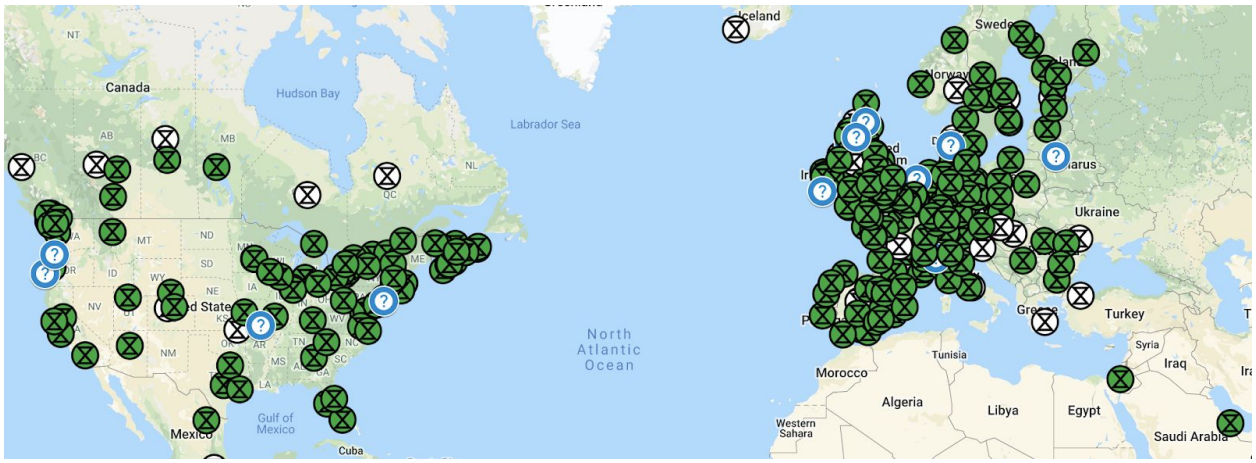
8. We avoid blaming and shaming.
We live in a toxic system, but no one individual is to blame.

9. We are a non-violent network.
Using non-violent strategy and tactics as the most effective way to bring about change.

10. We are based on autonomy and decentralisation.
We collectively create the structures we need to challenge power. Anyone who follows these core principles and values can take action in the name of Extinction Rebellion.

There are a few more things - it is extremely useful if you attend a local group meeting.

If you are reading this, you are probably already active. If not, check this out - **rebellion.earth/act-now/local-groups** - find your local group:



“Heading for extinction” (watch the talk)

Tell the truth.

Act as if the truth is real.

Here is the talk: https://www.youtube.com/watch?v=b2VkC4SnwY0

It’s helpful if we establish a common language - watch this talk, it’s really important.

A lot of assumptions in this book are based on this talk.

(it’s just like laughing with your old friend, you have loads of shared context)

It’s important to understand the consequences.

Snippet from “Before the Flood”[6]:

[6] https://www.beforetheflood.com/

Government Strategy Team

See the October Rebellion Decision-Making System[7]. Fantastic work creating all these documents and presentations.

Decide:

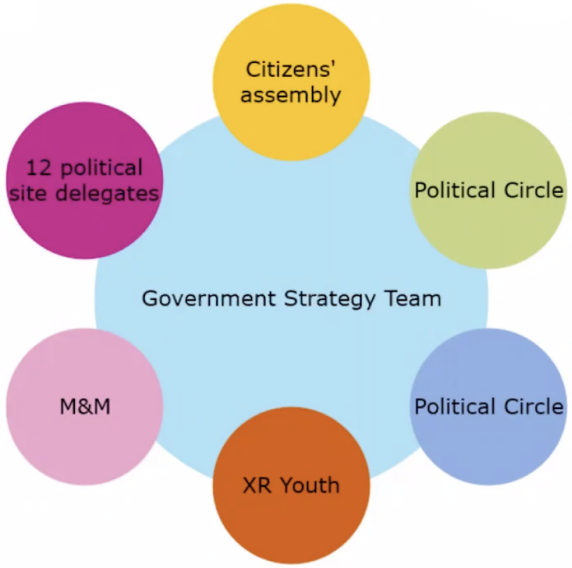
- Messaging strategy
- Who attends meetings

CANNOT NEGOTIATE - only liaise

Sites can request advice from the GST

Site delegates

3 Demands only



7 https://docs.google.com/document/d/1DGlCdqZxdYeEGUvXOuB-wpSSkYrH7OKwO3MYXydhdaA/edit?usp=sharing

I might not be the best liaison, I believe that many of the points in this book are critically important.

People on the ground have more knowledge and experience how to put pressure on the government. Not everyone had a chance to do the research on various tools and technologies.

My biggest skill is probably logic and rational game-theory incentives

Critical thinking

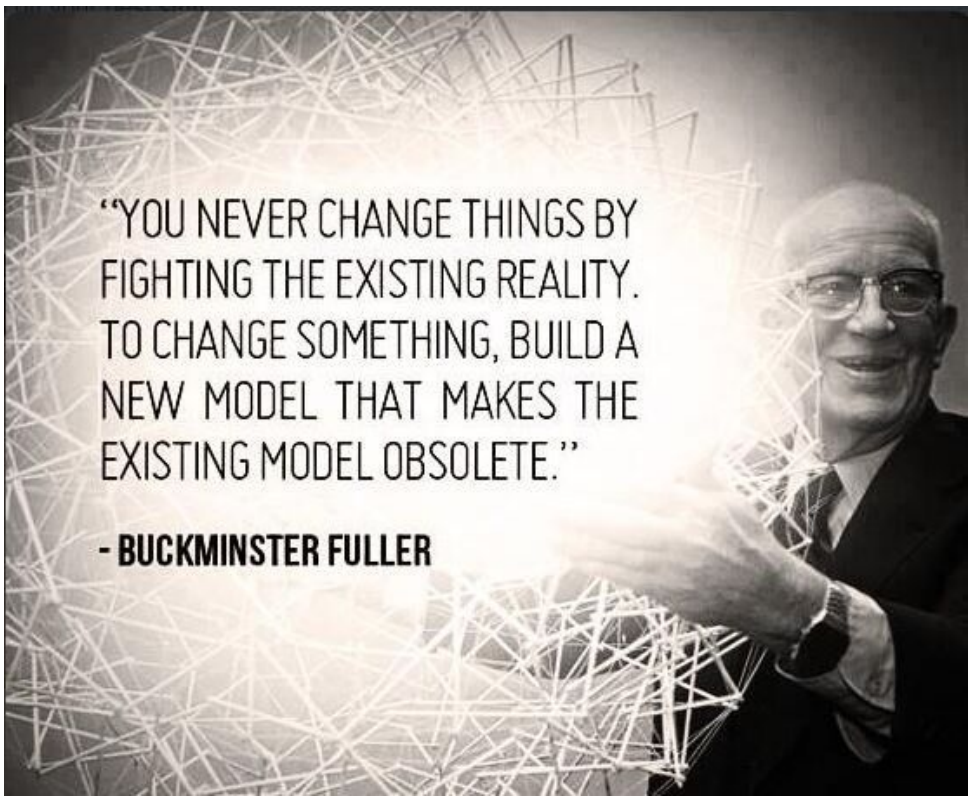
Don't trust. Verify.

Think for yourself.

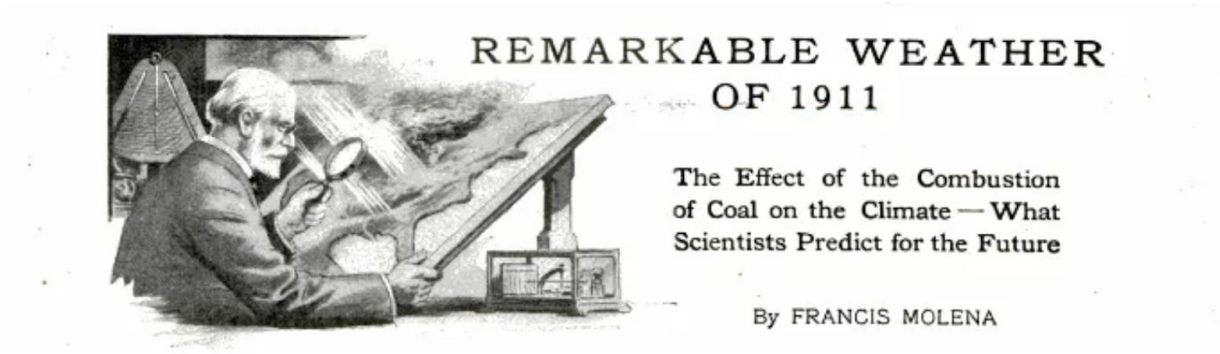
Make your own judgment.

I'm currently a resident of the **Planet A**. Because of that, my rational game-theory incentives are aligned towards self-preservation.

I actually may be willing to invest my time, energy, money, and effort to tell some useful stuff.



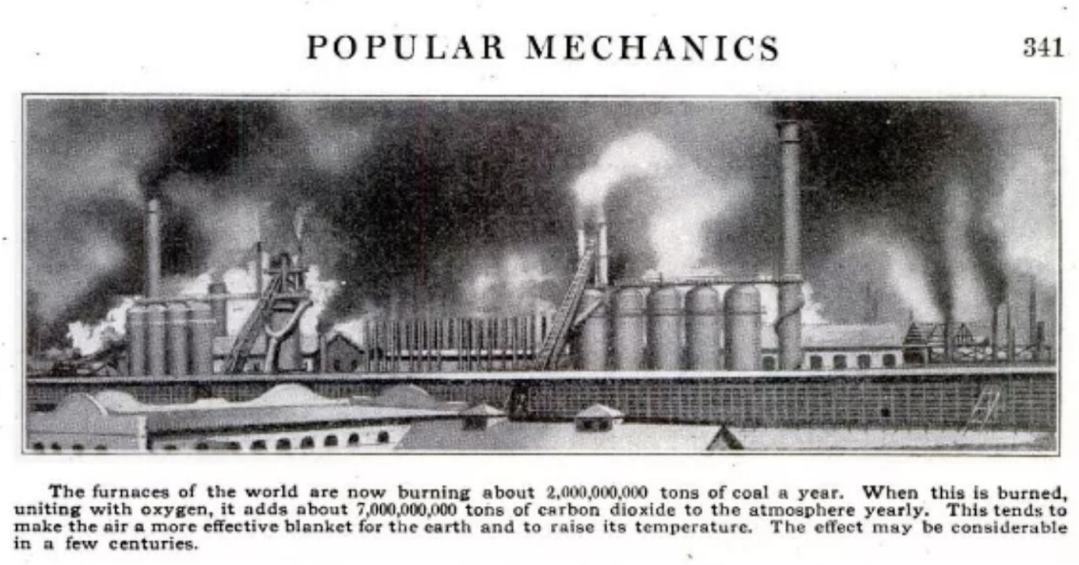
Bit of history



REMARKABLE WEATHER OF 1911

The Effect of the Combustion of Coal on the Climate — What Scientists Predict for the Future

By FRANCIS MOLENA



POPULAR MECHANICS 341

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature. The effect may be considerable in a few centuries.

It is not fake news, here is the fact check, it really was published in 1912[8].

Below is a snippet form an excellent article from 2008[9], it's perfectly valid Today:

> *"Time is fast running out to stop irreversible climate change, a group of global warming experts warns today. We have only 100 months to avoid disaster. Andrew Simms explains why we must act now - and where to begin"*
>
> *"The most common strategies used by government recently have been wringing their hands and blaming China's rising emissions, and telling individuals to, well, be a bit more*

[8] https://www.snopes.com/fact-check/1912-article-global-warming/
[9] https://www.theguardian.com/environment/2008/aug/01/climatechange.carbonemissions

> *careful. On the first get-out, it is delusory to think that countries such as China, India and Brazil will fundamentally change until wealthy countries such as Britain take a lead. And it is wildly unrealistic to think that individuals alone can effect a comprehensive re-engineering of the nation's fossil-fuel-dependent energy, food and transport systems. The government must lead."*

The government must lead, that's why suggesting some sure-fire policy changes.

Now we have the necessary momentum to put things into action.

1. Policy change action plan

I got a lot of inspiration from Climate Mobilisation Victory Plan[10]. It has a lot of insightful research, actionable policies and historical references. Franklin D. Roosevelt (president of the United States at the time) was able to act at short notice because all the plans, contingencies and proposals were already in place.

Check the definition of mobilization[11] on Wikipedia:

> *"The United Kingdom mobilized 22% of its total population for direct military service, more than any other nation of WWII era."*
>
> *"Importantly, some scholars have argued that such large scale mobilization of society and its resources for the purposes of warfare have the effect of aiding in state building. Herbst argues that the demands of reacting to an external aggressor provides a strong enough impetus to force structural changes and also forge a common national identity."*

We will need to change quite a few things so let's start from the beginning.

Historical examples

It was possible to confiscate gold in the US: https://en.wikipedia.org/wiki/Executive_Order_6102

It was possible to delete 47.5% from the bank deposits in Cyprus:
https://en.wikipedia.org/wiki/Capital_levy

It was possible to outlaw all ₹500 and ₹1,000 notes in India:
https://en.wikipedia.org/wiki/2016_Indian_banknote_demonetisation

[10] https://www.theclimatemobilization.org/victory-plan
[11] https://en.wikipedia.org/wiki/Mobilization

It was possible to change the sides of the road traffic in Sweden:
https://en.wikipedia.org/wiki/Dagen_H

It was possible to change the units and one plane got too little fuel in Canada:
https://en.wikipedia.org/wiki/Gimli_Glider

It was possible to put a man on the Moon 50 years ago:
https://en.wikipedia.org/wiki/Apollo_program

Guiding principles

- Easy to understand, it should intuitively make sense
- Creates the right incentives, taps into fundamental market forces
- Does not generate worse problems

Surely there will be some side effects, ideally they should form a virtuous circle.

Surely there will be some adaptation period, ideally it will be fair and everyone will be better off.

Let's proceed, let's start from the most important stuff.

Land use and relationship with food

This is the most fundamental policy, on par with the updated carbon credits market.

These two are highly connected, meat industry generates a lot of greenhouse gases.

A lot of land is used to grow feed for cows that produce a lot of methane in the process.

Victory Plan

Once again referring to Climate Mobilisation Victory Plan:

"By one estimate, the food system as a whole is responsible for about half of global greenhouse gas emissions, with agricultural production contributing 11-15% of global greenhouse gas emissions, processing, packaging, refrigeration, and retailing food contributing 15-20%, and food waste 2-4%. Some 70-90% of global deforestation is caused by agricultural land expansion, mostly for the production of industrial sugarcane, oil palm, soy, maize, rapeseed."

"A major reduction of meat and dairy production as well as a transformation toward a "carbon farming" system could help halt deforestation, reverse global warming through the mass sequestration of carbon dioxide, create a more sustainable economy, and produce yields sufficient to feed the global population."

More science

Veganism is 'single biggest way' to reduce our environmental impact on the planet, study finds:[12]

"Researchers at the University of Oxford found that cutting meat and dairy products from your diet could reduce an individual's carbon footprint from food by up to 73 per cent."

"Meanwhile, if everyone stopped eating these foods, they found that global farmland use could be reduced by 75 per cent, an area equivalent to the size of the US, China, Australia and the EU combined."

"Not only would this result in a significant drop in greenhouse gas emissions, it would also free up wild land lost to agriculture."

Avoiding meat and dairy is 'single biggest way' to reduce your impact on Earth[13]:

"Biggest analysis to date reveals huge footprint of livestock - it provides just 18% of calories but takes up 83% of farmland"

Prof Tim Benton, at the University of Leeds, UK, said: "This is an immensely useful study. It brings together a huge amount of data and that makes its conclusions much more robust. The way we produce food, consume and waste food is unsustainable from a planetary perspective. Given the global obesity crisis, changing diets – eating less livestock produce and more vegetables and fruit – has the potential to make both us and the planet healthier."

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12 https://www.independent.co.uk/life-style/health-and-families/veganism-environmental-impact-planet-reduced-plant-based-diet-humans-study-a8378631.html

13 https://www.theguardian.com/environment/2018/may/31/avoiding-meat-and-dairy-is-single-biggest-way-to-reduce-your-impact-on-earth

Link to the source[14]: "**Reducing food's environmental impacts through producers and consumers"**

> *"In addition to the reduction in food's annual greenhouse gases emissions, the land no longer required for food production could remove ~8.1 billion metric tons of CO2 from the atmosphere each year over 100 years as natural vegetation re-establishes and soil carbon re-accumulates, based on simulations conducted in the IMAGE integrated assessment model."*
>
> *"Communicating average product impacts to consumers enables dietary change and should be pursued. Though dietary change is realistic for any individual, widespread behavioral change will be hard to achieve in the narrow timeframe remaining to limit global warming and prevent further, irreversible biodiversity loss."*

More science

Guardian article[15]:

> *"Overall, the FOLU report said the damaging way the world currently produces food and uses land causes $12tn a year in hidden costs to the environment, human health and development."*

FOLU - Food and Land Use Coalition. The geek in me appreciates the typography and graphic design of their report[16].

> *"The global report from the Food and Land Use Coalition (FOLU) proposes a reform agenda – centred around ten critical transitions – of real actionable solutions. These could deliver the needed change to boost progress towards the Sustainable Development Goals (SDGs) and the Paris Agreement, help mitigate the negative effects of climate change, safeguard biodiversity, ensure more healthy diets for all, drastically improve food security and create more inclusive rural economies."*

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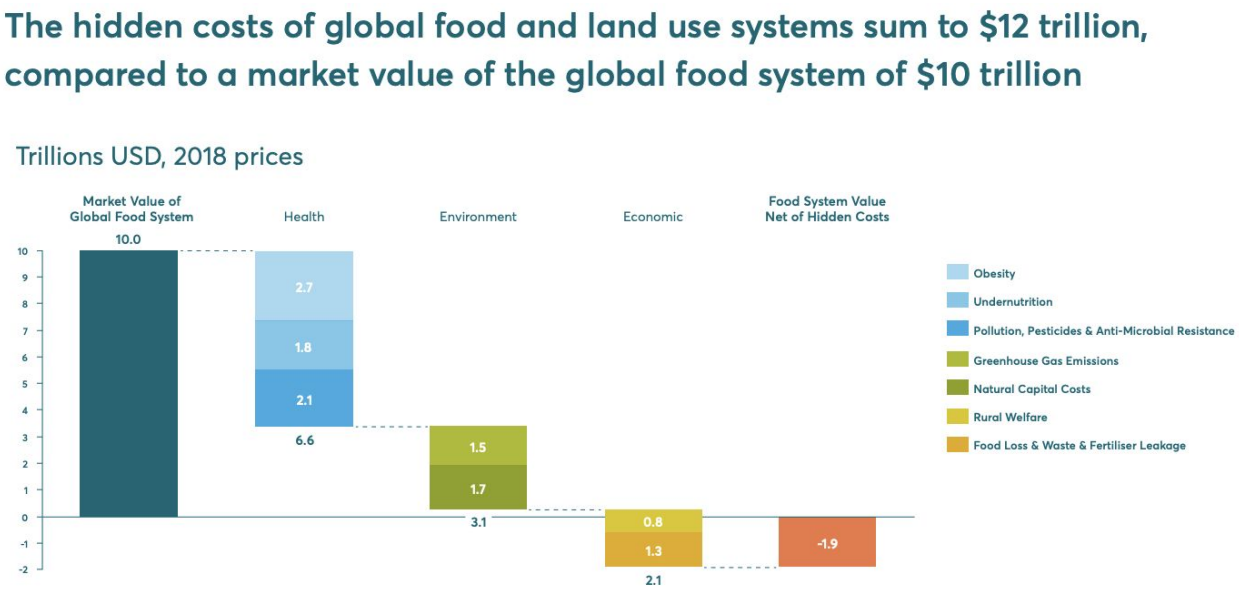
[14] https://science.sciencemag.org/content/360/6392/987

[15] https://www.theguardian.com/environment/2019/sep/16/1m-a-minute-the-farming-subsidies-destroying-the-world

[16] https://www.foodandlandusecoalition.org/global-report/



We are talking trillions with “t”. That’s comparable to GDP of China. Pretty substantial amount.

Bold claim

“By one estimate, the food system as a whole is responsible for about half of global greenhouse gas emissions”

This is a bold claim and a broad estimate.

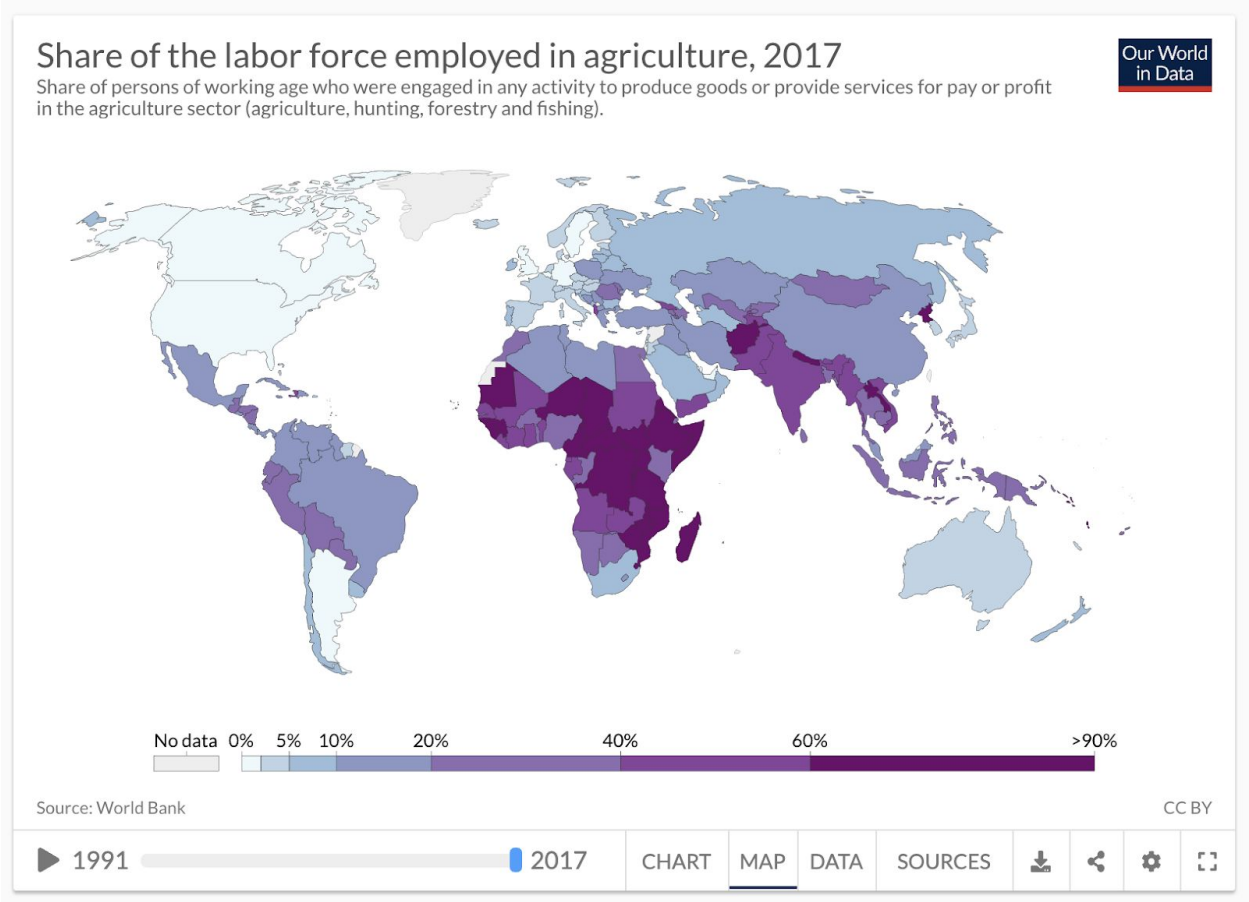
There are a lot of dependencies: Earth, climate, food production, society is a complex system.

What if the food had no subsidies and prices were determined by the market?

Just like we model climate, time to model what would happen to society.

See how few people are employed in agriculture

In the developed world it’s less than 5%: https://ourworldindata.org/employment-in-agriculture



Usually, when making a new policy someone will gain, someone will lose. This time around, everyone can win. Beef farmers will still make profits as they can repurpose their land, buildings, machinery, infrastructure, use the manure for compost and still sell some beef - at the updated market prices.

Farmers do not appear to me as super-wealthy individuals, they do not appear to have large lobbies in Brussels (European Union) or Washington DC and yet their affairs so fundamental to the future of the planet.

Mohamed Nasheed[17], president of Maldives in his essay *"We are not prepared to die"* published in the Extinction Rebellion handbook:

> *"I propose a test: the working people who stand to lose most from the end of the fossil-fuel age should be the first to gain from the new, clean economy. And we should apply that test before each and every intervention we make."*

[17] https://en.wikipedia.org/wiki/Mohamed_Nasheed

There will be plenty of new opportunities and guys who are no longer coal-miners have nothing to lose and with the right support and incentives can excel in a new model of the economy.

Why bother about the president of Maldives? According to Wikipedia[18]:

> *With an average ground-level elevation of 1.5 metres (4 ft 11 in) above sea level, it is the world's lowest country, with even its highest natural point being one of the lowest in the world, at 5.1 metres (17 ft).*

Positive side-effects of changing the relationship with food

Market prices and people were growing their own stuff? These are all related, all connected:

- Different land use - forests and other plants capturing CO_2 (drawdown).
- Less top-soil erosion, less fertilizers.
- Less shit, with less shit, you can use existing shit as https://en.wikipedia.org/wiki/Manure *(some people call it "organic", in the country where I'm from it was always like that).*
- Fewer antibiotics in the food system.
- Fewer superbugs *(bugs resistant to antibiotics).*
- Less disease.
- Better air quality.
- Better water quality.
- Less dependence on money.
- Less transportation when going to work.
- Less stress (stress at work, stress in traffic).
- Loneliness, community aspect - a bunch of neighbours growing stuff together.
- Connection with nature, not in a hurry, zen gardening.

Can gardening and connection with nature improve your mental health and overall fitness?

I know this is a bold claim. There is no scientific research because there is no industry lobby that would sponsor it. This claim is based on intuition and connecting various dots, 15 or so bullet points. Add a new line, rather than a comma and it could be 17, my favourite number.

Currently, there are no incentives to do that. Food is cheap, food is abundant, in the city like London the cost of food compared to the cost of housing is like 1 to 10.

Why did meat happen in the first place?

Note the ironic title of the publication, *"Meat Makes People Powerful"*[19]:

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[18] https://en.wikipedia.org/wiki/Maldives

[19] https://www.uipress.uiowa.edu/books/9781609385552/meat-makes-people-powerful

> *"With a special focus on East Asia, Meat Makes People Powerful reveals how national governments regulated and oversaw meat production, helping transform virtually vegetarian cultures into major meat consumers at record speed."*

From the review of that book[20]:

> *"They describe the major role that meat is playing in anthropogenic climate change and environmental pollution in general, as well as in the current global noncommunicable disease pandemic. They also discuss the overwhelmingly negative effects of meat consumption on animal welfare and on social equity."*
>
> *"Warren describes some of these negative effects, including water and air contamination and green-house gas emissions from livestock production, and infectious and noncommunicable diseases from meat consumption. Reducing the role of meat in our world has become an existential issue. For example, it is becoming clear that to avoid climate change catastrophe, greatly reduced animal food consumption must be part of our mitigation strategy and the rise in over-weight and obesity, and associated pandemic of diet-related noncommunicable diseases like diabetes, liver disease, heart disease, has huge social and economic costs."*
>
> *"A major obstacle, however, is the economic power of the food industry, which controls so much of our food environment and food information and has a corrupting influence on science. Can our current understanding of meat's impact on society give new power to arguments from Eastern traditions that call for reduced animal consumption on cultural, religious, and ethical grounds, as well as arguments from Western societies, where leading thinkers have promoted reduced meat consumption for ethical, health, environmental, and social reasons at least since Pythagoras in ancient Greece"*

Humanity completely lost touch with reality of how food is produced. Apples in the UK pretty much the same price around the year[21], no such thing as seasonality, where are the market forces *(supply and demand, transportation, storage)* in play?

Meanwhile in the EU - promoting meat

Article[22] and the actual website[23]:

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[20] https://www.foodsystemsjournal.org/index.php/fsj/article/view/670

[21] My own experience, it is difficult to find scientific data about that

[22] https://euobserver.com/environment/144364

[23] https://wonderfulbeef.eu/

EU spends €71m promoting meat, despite climate goals

Meanwhile in the EU - subsidising meat big time

Guardian article[24] commenting on Greenpeace report[25].

All the sources are public, these images speak more than 100 pages of accounting financial audit report - is anyone reading them at all?

I'm in the camp of don't trust, verify. I encourage you to always check the sources[2627].

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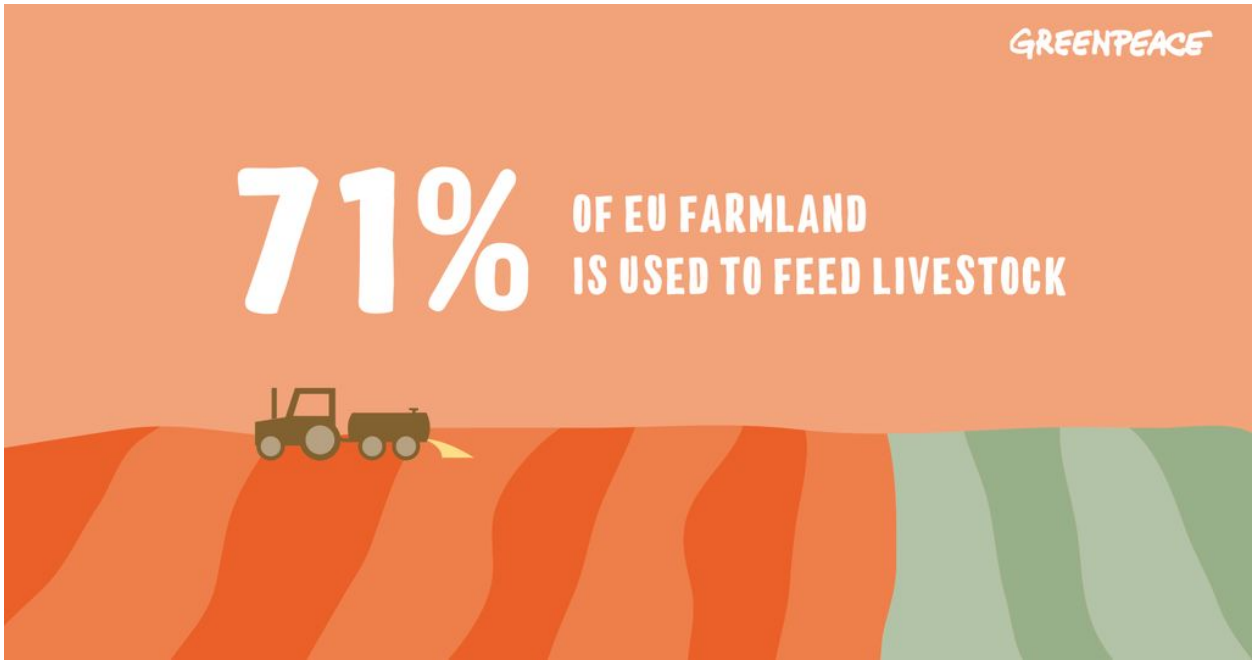
[24] https://www.theguardian.com/environment/2019/feb/12/nearly-a-fifth-of-eu-budget-goes-on-livestock-farming-greenpeace

[25] https://www.greenpeace.org/eu-unit/issues/nature-food/1803/feeding-problem-dangerous-intensification-animal-farming/

[26] https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en

[27] https://ec.europa.eu/agriculture/statistics/facts-and-figures_en



The subsidies making meat so cheap?

It feels unreal that 1KG of meat is a similar price to 1KG of vegetables[28] [29].

[28] http://www.mysupermarket.co.uk/aldi-price-comparison/Fresh_Meat/ASDA_Butchers_Selection_Beef_Mince_20_Fat_500g.html

[29] http://www.mysupermarket.co.uk/Shopping/FindProducts.aspx?Query=broccoli

In fact, meat is cheaper - eating 200g of meat will keep you fed - eating 200g of vegetables feels like a snack (I think it has something to do with nutrition density). Therefore, if you are poor you are more likely to end up eating meat. Who would have thought it?

Tesco Boswell Farms Beef Mince - 20% Fat

(500g)

£1.49

£2.98 / Kg

Waitrose Aberdeen Angus Mince Beef - 15% Fat

(400g)

~~£4.00~~ **£2.00**

£5.00 / Kg

ASDA Butcher's Selection Beef Mince - 20% Fat

(1Kg)

£3.75

£3.75 / Kg

Waitrose Broccoli Crown

(300g)

£1.50

£5.00 / Kg

Waitrose Tenderstem Broccoli

(80g)

£1.10 any 3 for £2.50

£13.75 / £10.42 / Kg

Ocado Organic Broccoli

(300g)

£1.00

£3.33 / Kg

Loss of nutrients

Hacker News[30]:

> *"This happened due to extermination of soil life through modern farming practices of heavy tilling, fertilizing and monoculture crops. Dead soil is more susceptible to erosion and requires ever increasing amounts of synthetic fertilizer to grow anythin"*

And the research itself[31]:

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[30] https://news.ycombinator.com/item?id=20965771

[31] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163803/

> *“Magnesium deficiency can be attributed to common dietary practices, medications, and farming techniques, along with estimates that the mineral content of vegetables has declined by as much as 80–90% in the last 100 years.”*

Victory Gardens

This is one of many ways. As societies will change the relationship how the food is produced, it’s worth highlighting a notable example from the history.

> *“Young men sacrificed their lives fighting for their country. Women surged into factories and families planted 50 million “Victory Gardens” that supplied 40% of America’s vegetables during the war. Scientists and universities pumped out research on behalf of the war effort leading to huge technological and intellectual breakthroughs. More than 10% of the population relocated, often across state lines, in order to find a ‘war job’.”*

Real posters from WWII, directly from Wikipedia[32]:

> *“Besides indirectly aiding the war effort, these gardens were also considered a civil ‘morale booster’ in that gardeners could feel empowered by their contribution of labor and rewarded by the produce grown. This made victory gardens a part of daily life on the home front.”*

[32] https://en.wikipedia.org/wiki/Victory_garden

Victory Gardens were commonplace, including White House and Buckingham Palace[33]. Even if it was only for propaganda, it shows it wasn't just some hippies on the fringes.

Markets reacting to meat innovation

Beyond Meat had IPO at $25 per share[34]. Their stock price is pretty insane.

There are other companies innovating in the space:

- https://impossiblefoods.com/

[33] https://www.naturespath.com/en-us/blog/victory-gardens-now/
[34] https://www.cnbc.com/2019/05/01/beyond-meat-prices-ipo-at-25-per-share-source.html

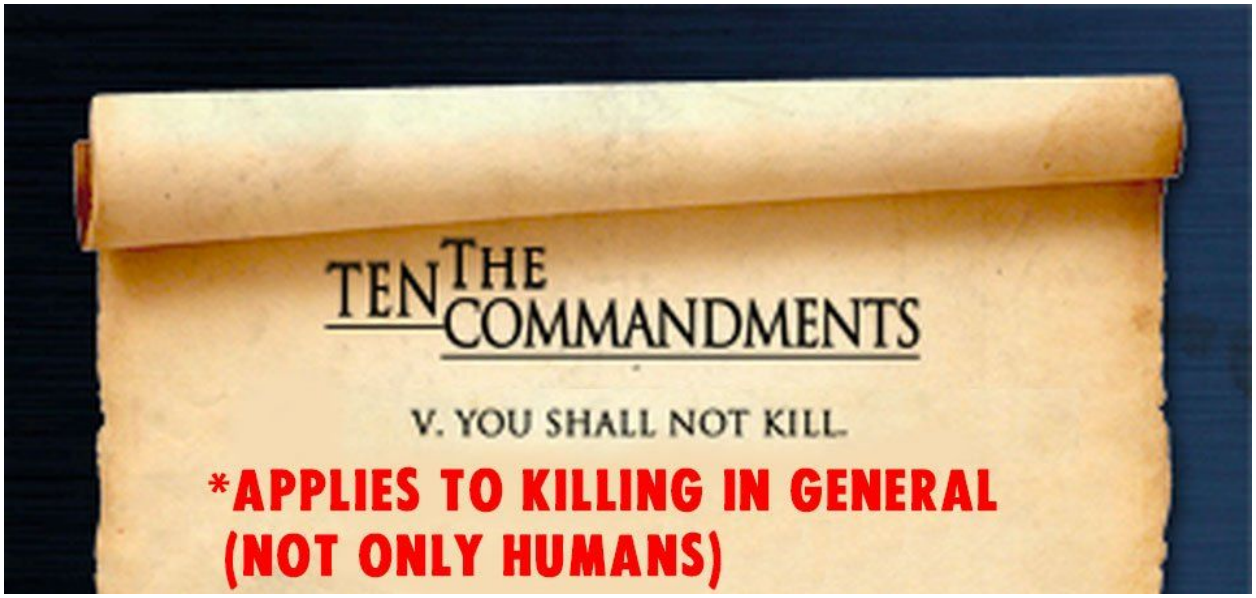
- https://www.redefinemeat.com

Check the prediction from Winston Churchill from 1931[35]:

> *"We shall escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under a suitable medium."*

The religious aspect of killing

Religion tried to make it happen: "you shall not kill". Maybe religious leaders can come together and explain to the devotees:



Artificial Insemination Directive (AID)

If you cannot prevent killing, you can make it more difficult to come alive.

There are various laws against animal cruelty.

Being artificially inseminated can be seen as cruel.

Two movies about meat situation

The Game Changers: https://www.imdb.com/title/tt7455754/

> *"A UFC fighter's world is turned upside down when he discovers an elite group of world-renowned athletes and scientists who prove that everything he had been taught about protein was a lie."*

[35] https://quoteinvestigator.com/2017/01/22/meat/

Cowspiracy: The Sustainability Secret*:* https://www.imdb.com/title/tt3302820/

> *"Follow the shocking, yet humorous, journey of an aspiring environmentalist, as he daringly seeks to find the real solution to the most pressing environmental issues and true path to sustainability."*

Simplified, unified, updated carbon credits market

I really wish it was understandable by the public.

I really wish it was as simple as knowing £1 is worth $1.23

There were so many numbers, estimates, allowances, different standards…

It is a really complicated subject and I realised I'm only scratching the surface.

In principle - we need to limit emissions to the atmosphere. There are many ways to do that and creating a market for emissions is one of them.

https://en.wikipedia.org/wiki/Emissions_trading

> *"The largest greenhouse gases (GHG) trading program is the European Union Emission Trading Scheme, which trades primarily in European Union Allowances (EUAs); the Californian scheme trades in California Carbon Allowances, the New Zealand Emissions Trading Scheme in New Zealand Units (NZUs) and the Australian scheme in Australian Units."*

Australian Units? Why can't we have standard units, such as 1 tonne? Just like having 10+ versions of Air Quality Index[36]. There is a lot of criticism related to the current system, my personal anti-favourite is free allocation.

https://en.wikipedia.org/wiki/European_Union_Emission_Trading_Scheme#State_allocation_plans

> *"The EU ETS has been criticized for several failings, including: over-allocation, windfall profits, price volatility, and in general for failing to meet its goals. Proponents argue, however, that Phase I of the EU ETS (2005–2007) was a "learning phase" designed primarily to establish baselines and create the infrastructure for a carbon market, not to achieve significant reductions."*

[36] https://en.wikipedia.org/wiki/Air_quality_index

You can still apply for free allowances in the UK:
https://www.gov.uk/guidance/eu-ets-allowances

> *The European Commission has set aside some free allowances for installation operators in the NER (New Entrant Reserve)*

Yeah, seriously, check this out: https://ec.europa.eu/clima/policies/ets/allowances_en

> *"Auctioning is the default method for allocating emission allowances to companies participating in the EU emissions trading system (EU ETS). However, in sectors other than power generation, the transition to auctioning is taking place progressively. Some allowances continue to be allocated for free until 2020 and beyond."*

Sorry guys, net zero to 2025, we need to tweak these numbers.

- Here are the source materials: https://ec.europa.eu/clima/policies/ets_en
- Dashboard to view data: https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1

> *"The EUTL is a central transaction log, run by the European Commission, which checks and records all transactions taking place within the trading system. The EU ETS data viewer provides aggregated data by country, by main activity type and by year on the verified emissions, allowances and surrendered units of the more than 12 000 stationary installations reporting under the EU emission trading system, as well as 1400 aircraft operators."*

Avoiding carbon leakage

Leaning on the source materials: https://ec.europa.eu/clima/policies/ets/allowances/leakage_en

> *"Under the EU emissions trading system (EU ETS),* ***industrial installations deemed to be exposed to a significant risk of carbon leakage receive special treatment to support their competitiveness****."*

> *"Carbon leakage refers to the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints. This could lead to an increase in their total emissions. The risk of carbon leakage may be higher in certain energy-intensive industries."*

> *"To safeguard the competitiveness of industries covered by the EU ETS, the production from sectors and sub-sectors deemed to be exposed to a significant risk of carbon leakage receive a higher share of free allowances in phase 3 of the EU ETS (2013-2020), compared to the other industrial installations."*

Translated form political bullshit bingo: we know you are likely to move your production elsewhere, so we give you some stuff for free so you don't do it. Atmosphere doesn't have borders, that's why need to unify.

Further criticism about carbon leakage: https://carbonmarketwatch.org/publications/myth-buster/

Whoever will be creating policies to facilitate net-zero emissions by 2025 needs to understand how the existing Emission Trading works on the international level. I suggest unified, international system, and as a baseline to use the population of a country not existing GW of energy production or CO_2 emissions.

In that way, many poor developing countries from "Global South" will receive higher allowances and will be able to trade them to transform their economy to fossil fuel free world.

I believe it is possible for 100 countries to form an alliance and enforce the standard on the rest. Even if the United States is in the camp of blatant denial, it is possible to boycott all their products. We have free and open-source alternatives to pretty much all the Silicon Valley software products. Of course it will be difficult to live without Google, Microsoft, Facebook, Apple products but it's not impossible.

Negative emissions

The IPCC report relies on BECCS[37] (Bio-energy with carbon capture and storage) to provide negative emissions.

> *"BECCS is the process of extracting bioenergy from biomass and capturing and storing the carbon, thus removing it from the atmosphere"*
>
> *"The carbon in the trees or crops used for the biomass comes from the greenhouse gas carbon dioxide (CO2), which they extract from the atmosphere whilst growing. As of 2019 most BECCS stores some of the carbon and leaves the rest with the bioenergy in the form of a biofuel, such as ethanol. By providing aviation biofuel and reducing the environmental impact of aviation BECCS may help with climate change mitigation."*
>
> *"As of 2019 five facilities around the world are actively using BECCS technologies and are capturing approximately 1.5 million tonnes per year "*

Some of the projects were canceled due to the lack of government funding[38]:

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[37] https://en.wikipedia.org/wiki/Bio-energy_with_carbon_capture_and_storage

[38] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010048/EN010048-0

> *It was confirmed on 25 November 2015 following the Chancellor of the Exchequer`s Autumn Statement that the £1bn ring-fenced capital budget for the CCS Competition would no longer be available. The decision meant that the CCS Competition was closed. On that day, the Chief Executive Officer of the Applicant stated that "it is too early to make any definitive decisions about the future of the White Rose project, however it is difficult to imagine its continuation in the absence of crucial Government support".*

The £1b from the government was canceled but they did it anyway. Pilot on a much smaller scale[39]:

> *"The commissioning of an innovative Bioenergy Carbon Capture and Storage (BECCS) pilot plant at Drax Power Station has started with the first carbon dioxide expected to be captured in the coming weeks."*
>
> *"Drax is partnering with Leeds-based C-Capture and is investing £400,000 in what could be the first of several pilot projects undertaken at the power station to deliver a rapid, lower cost demonstration of BECCS."*

"£1b" has three characters: £ 1 b
"£400,000" has eight characters £ 4 0 0 , 0 0 0

It's important to note that "£1b" is a much bigger number: £ 1 , 0 0 0 , 0 0 0 , 0 0 0

We need a 2500x increase, not 2500x decrease in funding.

I genuinely believe that BECCS will fit nicely with repurposing land using seawater that can sustain algae. Most of the conventional crops require freshwater, while algae produce oxygen and thrive in a saltwater environment. You can see the chapter about flooding the desert here.

Depending on priorities and resources available, we can decide whether to grow plants that capture CO_2 or produce energy as biomass or enrich the soil or all at once, all at the same time.

Energy

This chapter is a little bit technical, not expecting everyone to have an interest in various types of power plants. You can safely skip this one.

00820-Secretary%20of%20State%20for%20Energy%20and%20Climate%20Change%20decision%20letter%20and%20statement%20of%20reason.pdf

[39] https://www.drax.com/press_release/europes-first-bioenergy-carbon-capture-storage-pilot-now-underway/

Peaking power plants

Before you shout “solar yes, coal no”, need to understand base load and peak load how it is resolved: https://en.wikipedia.org/wiki/Peaking_power_plant

> *“Also known as peaker plants, and occasionally just "peakers", are power plants that generally run only when there is a high demand, known as peak demand, for electricity. Because they supply power only occasionally, the power supplied commands a much higher price per kilowatt hour than base load power. Peak load power plants are dispatched in combination with base load power plants, which supply a dependable and consistent amount of electricity, to meet the minimum demand.”*

That is the reason why Dubai, despite being on the desert with abundant sun, recently spent $1.8 billion to build a new coal plant[40].

The peak demand is reflected in prices of energy in many consumer tariffs. I can imagine that if we are going to achieve net-zero by 2025 we will have drastically reduce coal plants, as a result a lot of our daily activities will be dependent on weather. We will have weather forecasts that will estimate the amount of solar and wind electricity that will be generated the following day.

- If loads of sun, long day, then everything proceeds as normal.
- If the forecast is bleak, then run something like “snow day”[41] but related to energy.
- If 50/50, on the fence, then and only then run the peakers. Or maybe not, that month there were already many working days.

That will also mean working closer to the rhythms of nature - in the Summer people will work more because there is more energy coming from the Sun. In Winter, the energy that is available will be mostly used for heating, that means less other activities.

I’m not sure about supply chain of perishable goods but we need to cut off the emissions and shutting down coal plants will reduce the amount of energy available during certain times, when renewables are not online.

Hardware change - billions of coins and years of effort - or simple software upgrade, change how we operate as a society, just like Facebook and iPhone changed our civilisation within a decade, we are able to shift our relationship with paid employment as well.

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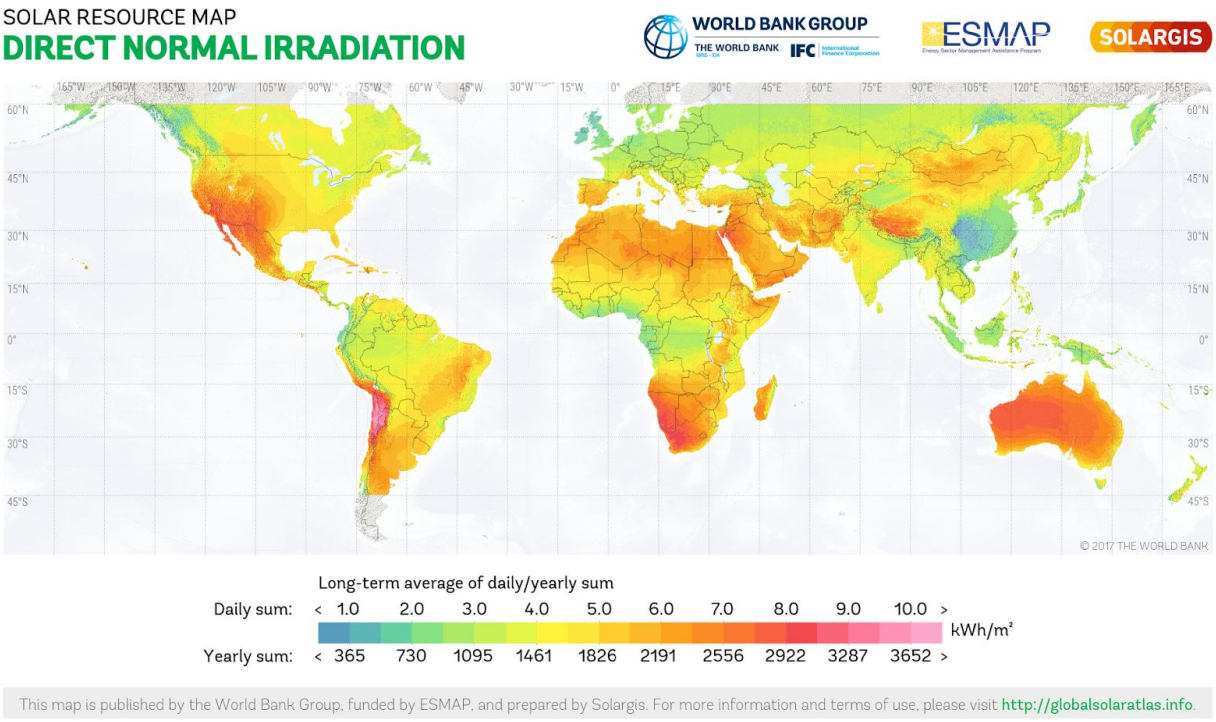
40 https://www.bloomberg.com/news/articles/2015-10-13/dubai-awards-acwa-1-8-billion-power-plant-deal-on-rising-demand

41 https://en.wikipedia.org/wiki/Weather-related_cancellation

Energy transfer

Solar panels in the UK are “nice to have”.

Solar panels on Sahara would have much higher utility:
https://en.wikipedia.org/wiki/Solar_irradiance



The UK has a solid baseload, high energy usage around the clock.

I think the highest energy usage is in Winter (heating) in the evening (giant TV) during a commercial break (kettle on).

During that time, solar is not generating electricity, all the baseload has to be provided from other sources.

It’s disgusting that subsidies made rich guys richer, people who own a property got some free taxpayers money without solving any underlying problems.

“Home solar panel installations fall by 94% as subsidies cut“[42]

42 https://www.theguardian.com/environment/2019/jun/05/home-solar-panel-installations-fall-by-94-as-subsidies-cut

I believe that $1000 worth of solar panels in Africa charges 1000 old Nokia phones, meaningfully improving the quality of life for 1000 people. Realistically speaking, we will not use expensive labour to detach existing panels, we would manufacture new on the spot and and find a way to transfer the energy.

I can envision the future where solar panels are strategically located around the world and energy is transferred, just like here:
https://en.wikipedia.org/wiki/List_of_high_voltage_underground_and_submarine_cables

Related energy transmission projects:

- https://en.wikipedia.org/wiki/Desertec
- https://en.wikipedia.org/wiki/Medgrid

> *"Medgrid project, created at the end of 2010 in Paris, is a large industrial project planned in North Africa, which aims to promote and develop a Euro-Mediterranean electricity network that would provide North Africa & Europe with inexpensive renewable electricity, mostly from solar."*

Energy storage: pumped hydropower[43] (and similar)

Currently it's 95% of all energy storage available on the plant. With pumped hydropower you need to have some gravity, that requires mountains.

We can always dig holes, build hills, if water is not available then can use train[44].

Digging holes has additional advantage - https://en.wikipedia.org/wiki/Ground-coupled_heat_exchanger - cooling, just like heating requires loads of energy and several meters below the ground there is a near constant temperature:

> *They use the Earth's near constant subterranean temperature to warm or cool air or other fluids for residential, agricultural or industrial uses.*
>
> *Earth tubes are often a viable and economical alternative or supplement to conventional central heating or air conditioning systems since there are no compressors, chemicals or burners and only blowers are required to move the air.*

If the energy is cheap and abundant, the return of investment is 100+ years. If net zero by 2025 and coal plants bye bye, energy prices reflect that, now it makes sense to use less.

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[43] https://en.wikipedia.org/wiki/Pumped-storage_hydroelectricity
[44] https://www.bbc.co.uk/news/av/technology-44549962/surplus-energy-rides-the-gravity-train

Energy storage: Flywheel[45]

It's potentially a game changer.

> *"A flywheel is a mechanical device specifically designed to efficiently store rotational energy (kinetic energy). Flywheels resist changes in rotational speed by their moment of inertia. The amount of energy stored in a flywheel is proportional to the square of its rotational speed and its mass. The way to change a flywheel's stored energy without changing its mass is by increasing or decreasing its rotational speed."*

Until recently I did not know such technology exists.

See how they compare to batteries:
https://en.wikipedia.org/wiki/Flywheel_energy_storage#Comparison_to_electric_batteries

> *"Flywheels are not as adversely affected by temperature changes, can operate at a much wider temperature range, and are not subject to many of the common failures of chemical rechargeable batteries. They are also less potentially damaging to the environment, being largely made of inert or benign materials. Another advantage of flywheels is that by a simple measurement of the rotation speed it is possible to know the exact amount of energy stored."*

> *"Unlike most batteries which only operate for a finite period (for example roughly 36 months in the case of lithium ion polymer batteries), a flywheel potentially has an indefinite working lifespan. Flywheels built as part of James Watt steam engines have been continuously working for more than two hundred years.Working examples of ancient flywheels used mainly in milling and pottery can be found in many locations in Africa, Asia, and Europe."*

> *"Most modern flywheels are typically sealed devices that need minimal maintenance throughout their service lives. Magnetic bearing flywheels in vacuum enclosures, such as the NASA model depicted above, do not need any bearing maintenance and are therefore superior to batteries both in terms of total lifetime and energy storage capacity. Flywheel systems with mechanical bearings will have limited lifespans due to wear."*

Check the paper below[46] and note the date - 1980 - as well as the title of the publication:
"Energy Storage: A Vital Element in Mankind's Quest for Survival and Progress"

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[45] https://en.wikipedia.org/wiki/Flywheel
[46] https://www.sciencedirect.com/science/article/pii/B978008025471550049X

Energy Storage
A Vital Element in Mankind's Quest for Survival and Progress
1980, Pages 485-493

DEMONSTRATION OF A LOW COST FLYWHEEL IN AN ENERGY STORAGE SYSTEM

> *"The flywheel development explored a number of promising low cost materials and produced flywheel configurations which were projected for a large scale production cost of about $50 per kilowatt hour. While this is comparable to the initial cost of competing lead-acid batteries, it is noted that, unlike the batteries, the flywheel would not have to be replaced several times during the life of the system."*

There are some drawbacks - precision engineering is required and potential for catastrophic failure - spinning disc at a high speed can be dangerous. That's why I'd put them in the holes dug in the previous chapter.

This technology is used commercially for 50+ years but only for specific use cases, such as catapulting jets from aircraft carriers.

You can even run a train on that: https://en.wikipedia.org/wiki/Parry_People_Movers

You search for "flywheel energy cost" and paywalled paper from 1980 is one of the top results.

I think we can do much better than that… This is a potentially gamechanger.

Energy storage: V2G vehicle to grid

- https://en.wikipedia.org/wiki/Vehicle-to-grid
- https://www.gov.uk/government/news/30-million-investment-in-revolutionary-v2g-technologies

At a given time, only a certain amount of vehicles is on the road. While they are plugged-in, the battery can act as a load balancer:

> *"Communicate with the power grid to sell demand response services by either returning electricity to the grid or by throttling their charging rate. V2G storage capabilities can also enable EVs to store and discharge electricity generated from renewable energy sources*

such as solar and wind, with output that fluctuates depending on weather and time of day."

In the era of negative interest rates (even for consumers), negative prices for energy do not surprise me anymore: https://www.theguardian.com/money/2019/aug/13/danish-bank-launches-worlds-first-negative-interest-rate-mortgage

I tried to figure out what is the price (supply and demand) of lithium - the main component of batteries. Having researched the subject, the answer is: "we don't know". I kid you not, recently there was a conference in Chile to decide what is the price[47].

*"Unlike for copper or other metals used to make electric cars, **there is no traded price for lithium**. The London Metal Exchange is working to develop a tradable price for the white metal, but until then, the industry's investors, customers, analysts and executives are left without a full sense of the global market."*

Qattara Depression Project

- https://en.wikipedia.org/wiki/Qattara_Depression_Project

"Use of nuclear explosives to excavate the canal was another proposal. This fit within the Atoms for Peace program proposed by President Dwight Eisenhower in 1953. Because of the concerns about using a nuclear solution the Egyptian government turned down the plan."

- https://www.energycentral.com/c/ec/qattara-depression-project-time-revisit

"Ever since the depression was first mapped by the British after the First World War, there have been proposals to link it to the Mediterranean by canal, tunnel, or a combination. Hydroelectric power from seawater flowing into the basin has been the primary interest. The area is hot and dry; rapid evaporation would enable a large inflow of seawater to be sustained indefinitely. The lake formed could support settlements along its shores with local fishing and salt mining economies. It could be expected to cool the region and to increase rainfall as well."

"Such massive pumped hydroelectric storage would avoid the need for hundreds of gigawatt hours of dispatchable output from inefficient fossil-fueled peakers and dispatchable coal-fired power plants otherwise needed to back irregular wind and solar PV resources. It could provide clean dispatchable power well in excess of the needs of

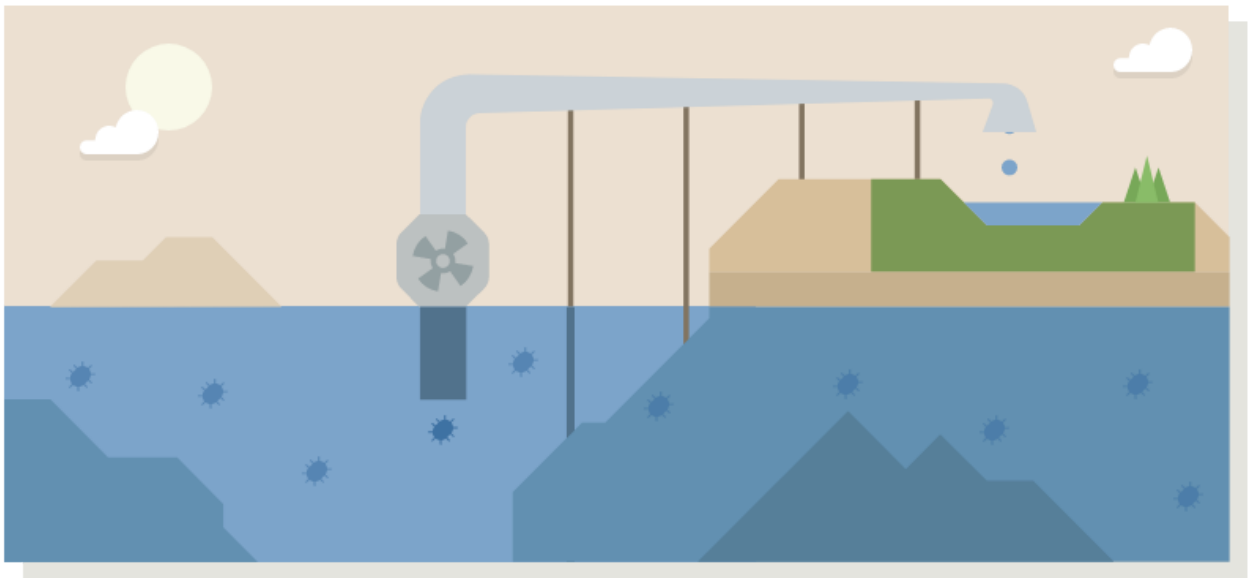
47 https://uk.reuters.com/article/uk-lithium-electric-prices/how-much-does-lithium-cost-the-industry-cant-seem-to-agree-idUKKCN1TA04R

the Qattara project itself. The market in Europe for that excess capacity might justify construction of the first trans-Mediterranean HVDC transmission line. That would break the "chicken and egg" situation that has stalled the Desertec initiative"

This article is really worth reading. The author has so much in-depth knowledge about engineering. It's definitely worth reading, it actually makes sense… The initial proposals were 100 years ago, various factors, lack of economic viability. But now the technology has moved on, also the economy is shifting. Time to revisit the project, especially that there is a way to do this in stages, without jumping head first.

Flooding desert

YCombinator is thinking big as well:



http://carbon.ycombinator.com/desert-flooding/

"Creating 4.5 million oases that are 1 km2 would allow us to sequester more than current global emissions (41+ giga tonnes of CO2 per year), while only requiring the equivalent of half the landmass of the Sahara desert."

"While building the infrastructure of the oases reservoirs would be the first part of the project, cultivating phytoplankton is the second challenge that would allow us to sequester carbon at the massive scale required."

"The transferability of these biological, software & hardware technologies across a wider array of problems has the potential to add to the commercial value beyond keeping us alive and our ecosystem in habitable form. For instance, the secondary effects of a portion of the desert land being newly habitable for humans could alter the global real

estate landscape. Figuring out how to autonomously terraform could bolster our abilities to do so on the Moon as well as Mars."

Price for water

Currently in some places water is for free. It's uncool for guys downstream, in another country.

This is just unreal, see the Guardian article[48]:

> *"In the US we are still governing our water based on compacts made in the 1800s – before the western cities had boomed, before suburban sprawl, before factory farming and a global supply chain and, of course, before climate change."*

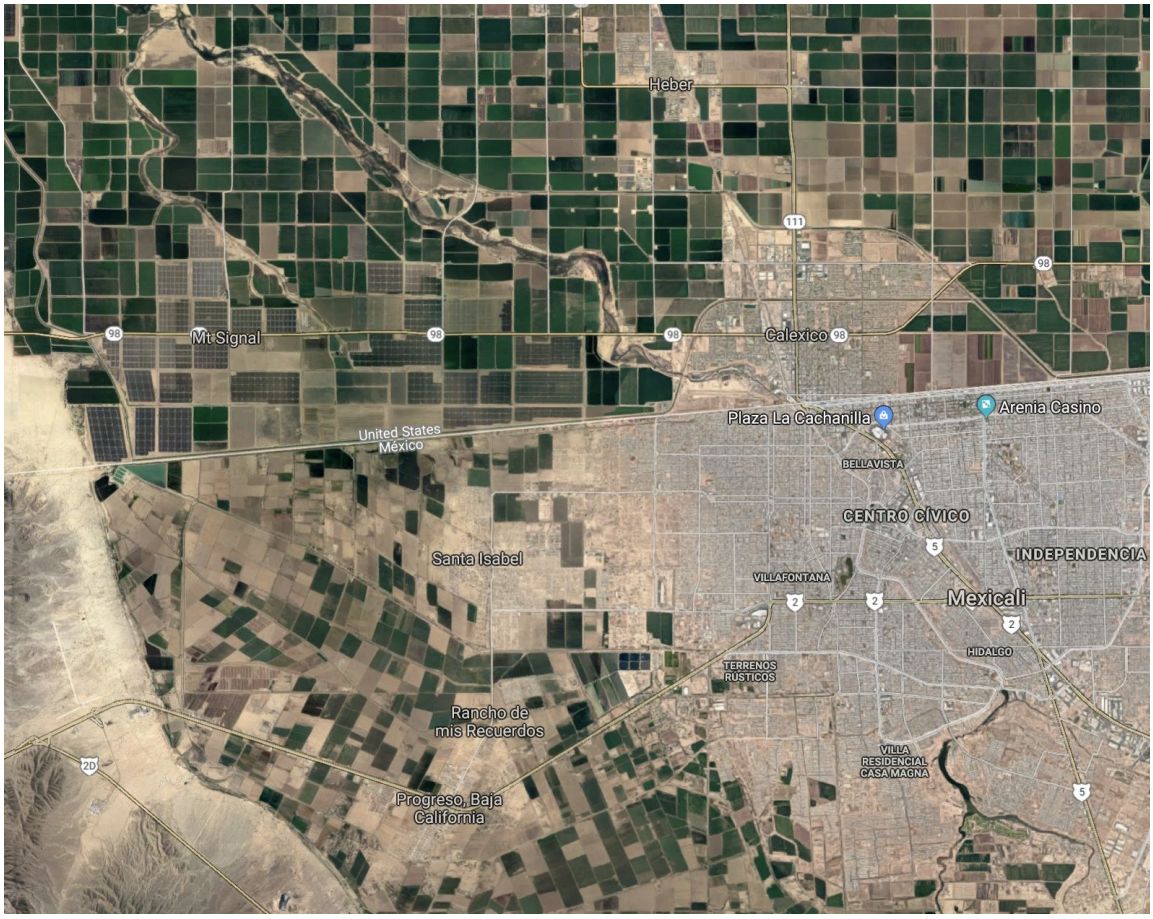
In the capitalist system, if there is a scarce commodity, with high demand and limited supply there should be a price for it? Not really, search for "alfalfa california" and be dismayed.

BBC also talks about it[49]:

> *"While historic winter storms have battered much of the US, California is suffering its worst drought on record. So why is America's most valuable farming state using billions of gallons of water to grow hay - specifically alfalfa - which is then shipped to China?"*

If you inspect closely, you'll see the Colorado River dries up before reaching Mexico. If you are reading it on grayscale Kindle, Google Maps satellite photo will not look great but try see it for yourself[50]:

[48] https://www.theguardian.com/us-news/2019/mar/25/california-water-drought-scarce-saudi-arabia
[49] https://www.bbc.co.uk/news/magazine-26124989
[50] https://goo.gl/maps/Q8QRUDVvBuJy1mRH9



Alfalfa is a cow feed, that's why need to ensure market prices for water, meat, dairy.

When researching this stuff, I was able to find some pretty hilarious "fake news". There a whole chapter on that: banning "fake news".

War over water

Do you think future wars will be over water? Technically speaking, it's nothing new, it's already been happening for 50+ years.

I'm not even trying to summarize that, there are so many resources available:

https://en.wikipedia.org/wiki/Water_conflict_in_the_Middle_East_and_North_Africa
https://en.wikipedia.org/wiki/Water_politics_in_the_Middle_East
https://en.wikipedia.org/wiki/Water_politics_in_the_Nile_Basin
https://en.wikipedia.org/wiki/Water_politics_in_the_Jordan_River_basin
https://en.wikipedia.org/wiki/War_over_Water_(Jordan_river)
https://en.wikipedia.org/wiki/Headwater_Diversion_Plan_(Jordan_River)

> *"The plan was approved by the Arab League in 1964 but Israel prevented the project's development by conducting airstrikes in Syrian territory in April 1967."*

https://en.wikipedia.org/wiki/Sharing_the_water_of_the_Ganges
https://en.wikipedia.org/wiki/War_over_Water
https://en.wikipedia.org/wiki/Water_conflict
https://en.wikipedia.org/wiki/Water_security
https://en.wikipedia.org/wiki/Water_politics
https://en.wikipedia.org/wiki/Water_scarcity

Recently in Turkey there are complaints about historical city Hasankeyf being flooded as Ilisu dam[51] is filling its reservoir. It only highlights how media are shaping our perception - the initial surveys were in 1954 and the construction started in 2006.

> *"In June 2009, after failing to meet the standards, the European firms officially cut the funding."*

> *"Shortly after the announcement of the funding loss, Turkey's Environment Minister Veysel Eroğlu said 'Let me tell you this, these power plants will be built. No one can stop it. This is the decision of the state and the government.'"*

It's kind of funny that the media report about it only now, and when they report it focuses on some ruins rather than water politics in the region. If you want to now, Turkey is part of NATO and controls another river flowing through Syria and Iraq[52]

> *"Syria and Iraq claim to be suffering severe water shortages due to the project development. Both countries allege that Turkey is intentionally withholding supplies from its downstream neighbors,* ***turning water into a weapon****. Turkey denies these claims, and insists it has always supplied its southern neighbors with the promised minimum of 500m^3/s.. It argues that Iraq and Syria in fact benefit from the regulated water by the dams as they protect all three riparian countries from seasonal droughts and floods."*

Emphasis mine. I'm curious how many think tanks around Pentagon and evaluating various water scenarios in the region:

- https://en.wikipedia.org/wiki/Mosul_Dam#Demolition_concerns_during_the_2003_invasion
- https://en.wikipedia.org/wiki/Battle_for_Mosul_Dam

Update our accounting models

- https://en.wikipedia.org/wiki/Virtual_water + virtual carbon

[51] https://en.wikipedia.org/wiki/Ilısu_Dam
[52] https://en.wikipedia.org/wiki/Atat%C3%BCrk_Dam#Geostrategic_importance

- https://en.wikipedia.org/wiki/Triple_bottom_line
- https://en.wikipedia.org/wiki/Gross_National_Happiness - an example from Bhutan

Check the Club of Rome and their climate emergency plan[53][54]:

> *Replace GDP growth as the main objective for societal progress:*
> *• Adopt new indicators – such as the Genuine Progress Indicator – that accurately measure human progress, welfare and wellbeing, rather than production growth*
> *• Make sure market prices reflect the true costs of production, i.e. integrating social, environmental and ecosystem decline costs in market pricing.*

The “true cost of production” - including social and environmental is precisely triple bottom line.

In other words - as long as it is legal and profitable to exploit the environment - it will continue. Same applies to “fake news” - if the clickbait title gets you clicks and you are paid from advertising impressions - it will continue, business as usual.

It’s the system that is structurally toxic and bad designed, no blaming, no shaming, no pointing fingers.

Until recently I thought it is a legal obligation to maximise the profit. Whether it is 100% true or is it just a common misconception, the CEO bonus is usually related to the stock price[55]:

> *“Usually maximizing shareholder value is not a legal obligation, but the product of the pressure that activist shareholders, stock-based compensation schemes and financial markets impose on corporate directors.”*

See alternative incorporation models:
- https://en.wikipedia.org/wiki/B_Corporation_(certification)
- https://en.wikipedia.org/wiki/Community_interest_company

Repurpose military technology

You can use the military to defend borders from continuous waves of refugees.

Alternatively, you can use the manpower to do something for the climate.

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[53] https://en.wikipedia.org/wiki/Club_of_Rome
[54] https://www.clubofrome.org/project/the-club-of-rome-climate-emergency-plan/
[55] https://www.lawschool.cornell.edu/academics/clarke_business_law_institute/corporations-and-society/Common-Misunderstandings-About-Corporations.cfm

1. Use labour of soldiers to build stuff. Get **muscle, discipline and organization** by lifting heavy objects on a construction site.

2. Use steel and machinery for construction

3. Thicker armor. Fiercer bullets. Arms race. Engineering resource. **Just stop.** Different game.

4. All the fancy nuclear submarines can use their engines to generate electricity.

Russian floating nuclear power station is a real thing:

- https://en.wikipedia.org/wiki/Russian_floating_nuclear_power_station
- https://en.wikipedia.org/wiki/Akademik_Lomonosov

Cold war and the arms race is a scary thing:

- https://en.wikipedia.org/wiki/Operation_Chrome_Dome
- https://en.wikipedia.org/wiki/1968_Thule_Air_Base_B-52_crash

Build hydropower?

Water retention and hydropower comes to mind:

- Protecting against floods
- Protecting against droughts
- Protecting against climate extremes
- Storing energy (pumping uphill) when loads of renewables available

There is a caveat though - most of the low-hanging fruits are already exploited. There will always be some negative side effects, just like that example in Turkey.

Build houses

The second area of interest is manufactured housing. You spend money on missiles and drones that destroy houses. You can make money by building homes and infrastructure.

I think it has something to do with abundance vs scarcity mindset.

Abundance mindset - I have more, you have more, everyone has a bigger pie.

Scarcity mindset - I need to protect what I have, steal from you, you steal from me - we are now both invested in the arms race.

A few following points are about decision making, “fake news” and education - these are highly related - cannot make informed decisions based on false information. Carry on with me…

Update the consensus model

So much political indecisiveness. Search for: *"noting welcoming IPCC"*[56]

> *"Saudi Arabia had fought until the last minute in Korea to limit the conclusions of the document."*
>
> ***"With no consensus, under UN rules the passage of text had to be dropped."***
>
> *"We are really angry and find it atrocious that some countries dismiss the messages and the consequences that we are facing, by not accepting what is unequivocal and not acting upon it"*
>
> *"Climate science is not a political football"*

Apparently, climate science is a political football.

Saudi Arabia, US, Russia and Kuwait - countries heavily reliant on oil - blocked the thing.

Saudi Arabia has a strange legal system.
Gay = death.
Weed = death.
Murder = https://en.wikipedia.org/wiki/Blood_money_(restitution)

Saudi Arabia has one of the largest oil reserves, they have incentives to keep a dependency on oil, they have incentives to deny the facts.

Of course I'm worried that by shaming them I could become a target of a hitman. Truth cannot be stopped, I really wish Saudi Arabia updated they their definition of truth and was respecting human rights.

Rule of 99% (consensus)

In real life, you are never ever 100% certain about anything.

99% of the scientist tell climate change is real and is caused by humans - 99% is enough.

If 99% is not possible instantly, the next day 95% is OK. After 2 weeks the consensus rule drops to 67% which is the absolute minimum.

If no consensus is reached by this time, back to the drawing board.

---

[56] https://www.bbc.co.uk/news/science-environment-46496967

That's where politics kicks in.

Everyone understands the issue, everyone is on the same page. One country is strongly against, other countries can offer something in exchange *(Russia offering vast expanses of Siberia to relocate small island states)*

Rule of 99% (trade-off)

With every new policy, someone will gain, someone will lose. The acceptable threshold is up to 1% of people losing. Losing but not-losing, surely there will be an adaptation fund in place. For instance - if your job is lost due to changes in the economy, I can easily envision MOOC (Massive Open Online Courses) like Coursera or Udemy organised in local schools, or at your pace at home. Having a community and tutor can be helpful, a matter of preference.

In the first instance, I was thinking about beef farmers losing their business. But they have access to land, machinery, buildings, infrastructure - soon they could be one of the richest guys on the planet.

The payout release can be conditional on meeting targets. In that way the biggest polluters are now the biggest supporters - they will receive payouts only when the targets are met.

Another example - Schengen Area[57]. Border guards surely lost their jobs. But surely they found jobs elsewhere. A small group of people should not block European integration?

And sadly Prison Guards Union who have incentives to keep prison–industrial complex running. It's against the law in many places, but if the police are on strike, who's going to enforce that?

Global education curriculum

Just like “fake news” - avoiding division, getting people aligned. Humans on this planet being in the same team.

By creating a basic program it will be much easier to implement any of the global policies:

- Literacy, numeracy
- English. Alternatively: Latin and Esperanto are not really competitors, Chinese too difficult
- Health, human body, food, nutrition
- Nature, earth sciences, environment
- Making, engineering, tinkering
- Communication, relationships, culture, tolerance, other religions

[57] https://en.wikipedia.org/wiki/Schengen_Area

Check this out, every major religion is against theft, murder, rape. On the fundamental level humans around the world share so many values, everyone shares similar needs.

If we align education, that will help mitigate the conflicts and agree on short-term sacrifices.

Related: https://www.xprize.org/articles/global-learning-xprize-two-grand-prize-winners

Worried about propaganda. Worried that some authoritarian regime can hijack this and push their own agenda. Or maybe the other way round - they are doing this already and now, for a change, we can teach young people how to question things, how not to be a victim of authoritarian regimes?

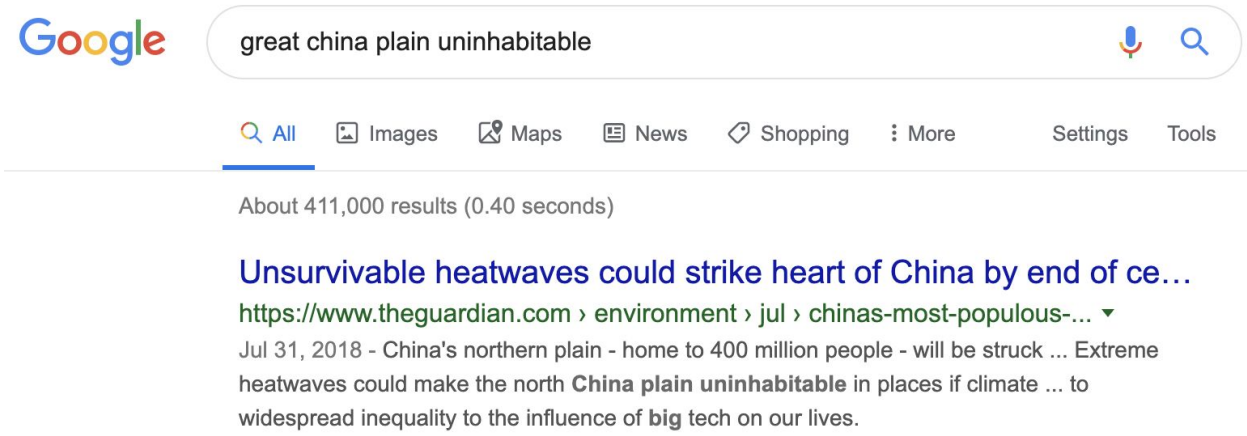
It's a lengthy and complicated subject.

I've already seen a game - https://mission1point5.com - promoted in an advert.

United Nations is already pushing their agenda in an advert… I expect more similar initiatives in the future.

Immigration Policy

I don't think anyone has an accurate estimate of what will happen in the next couple of years: https://en.wikipedia.org/wiki/Environmental_migrant



This trailer - https://www.kickstarter.com/projects/joshfoxtthc/rally-the-truth-help-us-fund-the-truth-has-changed-tour - says “up to 1 billion”

People who arrive in Europe are exhausted, exposed to life-threatening situations, no savings, no stability.

As a result, they are more likely to commit a crime. Not because they are evil, because they have no choice.

In fact, they are the most risk-taking, resourceful and entrepreneurial people out there, who had enough courage to cross thousands of kilometers in the hope to find a new home.

The ratio of new immigrants is not going to slow down, we need to teach them language, culture and why not provide them jobs with massive public works program?

Check what Putin is doing with offering free land in Siberia[58]:

> *“The Russian Homestead Act is a 2016 proposal by Russian President Vladimir Putin to give 1 hectare, or 2.5 acres of free land in the Russian Far East to Russian citizens and foreign nationals as long as they live there for five years.“*
>
> *“The program originally was mostly aimed at Ukrainian Citizens, and came about as a possible method of resettling about 500,000 refugees.“*

Public works program

Check the Colorado River Aqueduct[59]:

[58] https://en.wikipedia.org/wiki/Russian_Homestead_Act
[59] https://en.wikipedia.org/wiki/Colorado_River_Aqueduct

> *“Originally conceived by William Mulholland and designed by Chief Engineer Frank E. Weymouth of the MWD, it was the largest public works project in southern California during the Great Depression. The project employed 30,000 people over an eight-year period and as many as 10,000 at one time.”*

It is perfectly possible that military, supported by the public and immigrants (see the previous point about immigration) will work side by side.

Other proposals

Previous points are big, radical, substantial. The ones below are much smaller.

Plastic and recycling

Please educate me on how to properly do recycling.

I see people washing plastic containers - wasting water and energy to heat that water. Does it matter? Tell me exactly how to do this efficiently, if you are shipping it to another part of the planet, there is no point in my “pretending” I do something good.

My suggestion is to make all containers reusable at a minimal effort.

Mars Robertson 🌎🌍🌏
@marsxrobertson

Follow

Why am I bothered?

Because I see so many guys cleaning their "to be recycled" waste and wasting fresh water and energy, when in fact it's landing on some giant dump on the other side of the planet.

@BBCTwo @hughswaronwaste

facebook.com/bbctwo/videos/ …

Tweet about containers: https://twitter.com/marsxrobertson/status/1154005084050731008
Tweet about recycling: https://twitter.com/marsxrobertson/status/1141020624170704903

Climate ~~Change~~ or Climate Emergency?

Change the message.

Change is OK, everything is changing.

Warming is good, I like Summer.

Biodiversity loss and species going extinct? Well… It's adaptation (lack thereof) and evolution.

Say I'm a minimal wage manual laborer. I don't even have a passport, I will never see these glaciers that are disappearing somewhere 5000 miles away.

I need to feed my family. I couldn't care less about Panda or Polar Bear.

Can we change the language so that people start caring?

Cities (counties) going underwater and the planet is no longer to sustain any life at all, just like happened to Venus[60]:

> *“It is thought that the early environment of Venus was more like that of Earth with liquid water on the surface. At some point in the evolution of Venus, a runaway greenhouse effect occurred, leading to the current greenhouse-dominated atmosphere. Venus's atmosphere has therefore received a great deal of attention from those studying climate change on Earth.”*

My suggestion is to replace “climate change” with “climate emergency” or “climate breakdown”

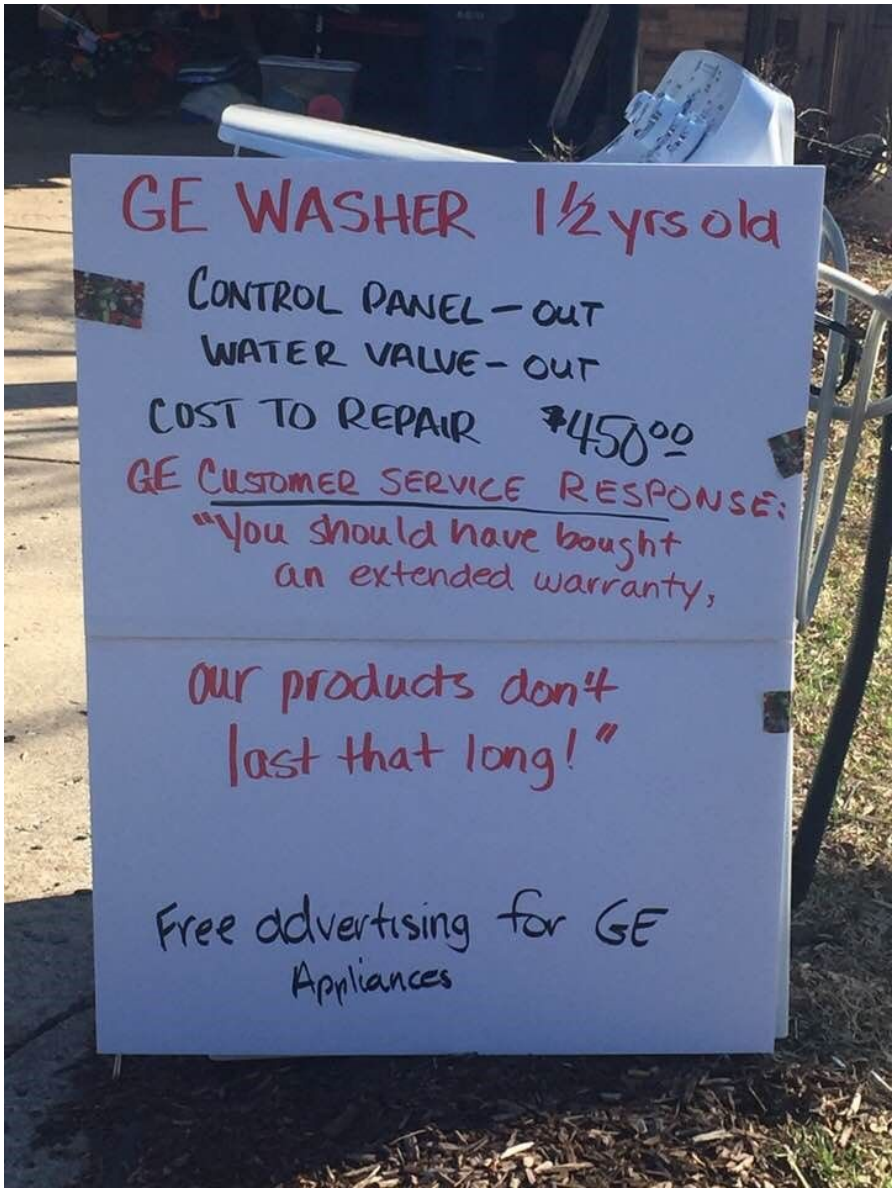
The same wording rule can apply to “sustainable” and “regenerative”.

What we do now is completely unsustainable, we need to be regenerative.

No planned obsolescence, built to last

Kind of obvious. 5 years warranty by default changes the game. Simple. Easy. Straightforward.

[60] https://en.wikipedia.org/wiki/Atmosphere_of_Venus



Sharing economy

https://en.wikipedia.org/wiki/Carsharing

The network is useful only if there is a sufficient density. That's why Airbnb started in NYC and Uber in SF. Founders were very hands-on, including doing quality photos of the apartments as well as asking friends to be the drivers.

On the one hand, I appreciate Adam Smith, self-interest of an individual. On the other hand, bike sharing is a commodity and I do not fancy 10 different apps each with £20 minimal deposit. A single unified network could be much more practical.

HINT: if you are entrepreneur build a single app to aggregate them all.

There is some more on post-capitalism and rethinking our economic priorities.

Change the defaults: housing standards

https://en.wikipedia.org/wiki/Passive_house
https://en.wikipedia.org/wiki/Zero-energy_building

Also disaster resilience with shelter in a basement in any areas affected by tropical storms.

Change the defaults: dairy milk

Subsidising milk:
https://www.gov.uk/government/collections/the-school-milk-subsidy-scheme-guidance

Have we actually established it is healthy or some paid research?

http://www.bbc.com/future/story/20190218-when-did-humans-start-drinking-cows-milk

"When you think about it, milk is a weird thing to drink. It's a liquid made by a cow or other animal to feed its young; we have to squirt it out of the cow's udders to obtain it."

Controversial stuff

I am not sure if this should happen.

These projects may face some political and social obstacles. I'm definitely concerned that you'll stop liking me.

As much as possible I would prefer to make decisions on cost-benefit analysis, facts, research, data, and science.

Would you like to know my opinion? I honestly do not know what is my opinion, so many factors are involved. There are more examples like that - referencing something that exists but does not constitute my viewpoint.

Always think for yourself and be aware multiple viewpoints are available. If you don't know what's going on - follow the money.

If you don't like something, don't dismiss the rest.

My intention is to open space for discussions and find a language to talk about pressing problems.

Geoengeenering

https://en.wikipedia.org/wiki/Climate_engineering
https://en.wikipedia.org/wiki/Solar_radiation_management
https://en.wikipedia.org/wiki/Reflective_surfaces_(climate_engineering)

> *“Selecting or genetically modifying commercial crops with high albedo has been suggested.”*

https://www.independent.co.uk/news/science/artificially-manipulating-arctic-climate-by-whitening-surface-of-ocean-to-reflect-sunlight-back-into-10210896.html

> *“Some researchers have suggested that this radical “geoengineering” approach should be considered in a global emergency if the summer sea ice of the Arctic disappears completely, as climate models predict it will in the coming decades due to global warming.”*

https://www.sciencemag.org/news/2016/04/fight-global-warming-senate-calls-study-making-earth-reflect-more-light

> *“For decades studying albedo modification has been taboo in the United States, Keith says, for fear that it would distract from the ultimate goal of zeroing out carbon emissions.“*

> *“As a result, many promising proposed climate engineering do not yet have the engineering development or experimental evidence to determine their feasibility or efficacy.“*

Moon in 1969, now we have aerogels, superconductors, nanotechnology, surely we can figure out a way with albedo.

Population

Once again Club of Rome Climate Emergency Plan[61]:

> *"Scale up all commitments to achieve the ambitions set by Family Planning 2020xi in order to provide 120 million more women and girls access to contraceptives by 2020."*

> *"Ensure the roll-out by 2025 of UNESCO’s International Technical Guidance on Sexuality Education in all countries, to ensure that girls and boys have access to the*

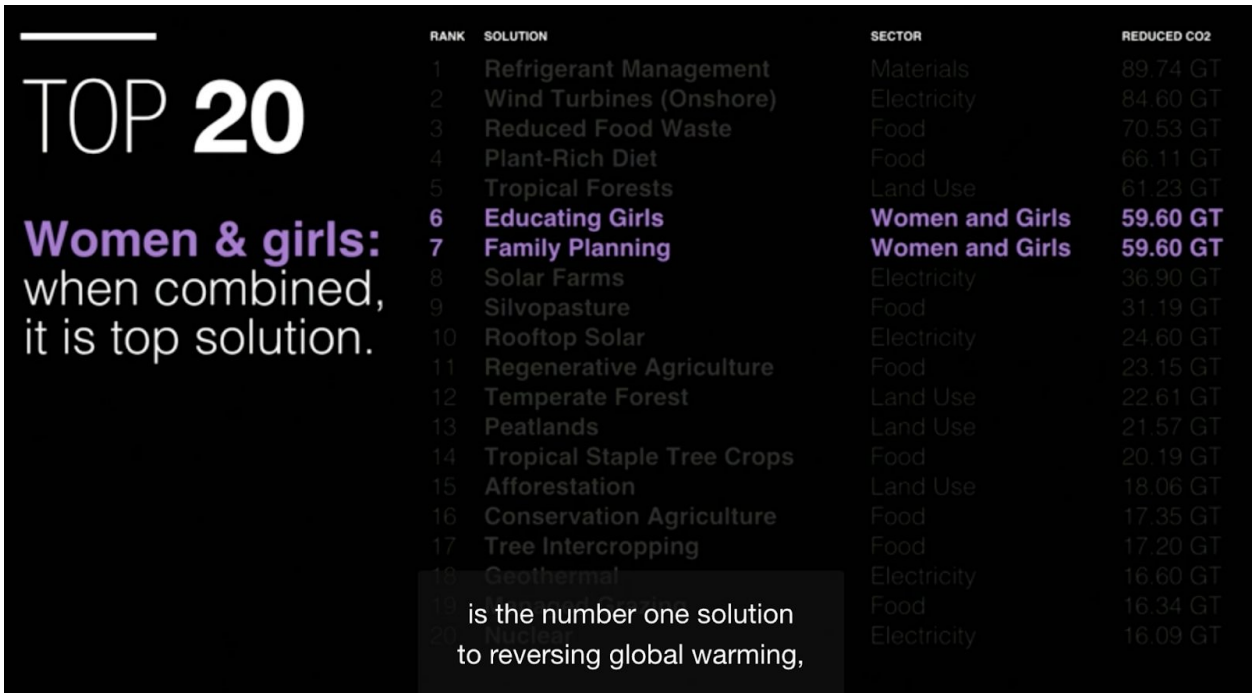
[61] https://www.clubofrome.org/project/the-club-of-rome-climate-emergency-plan/

highest quality, evidence-based education packages that will enable them to make healthy choices about all aspects of their reproductive and sexual lives"

"Ensure the right to gender-transformative education to give every girl the right to a safe, formal, quality education and access to lifelong learning"

"Empower women to make choices about reproduction, family size and timing"

And the TED talk[62] with solutions to reverse global warming:



Family planning sounds more politically correct than anticonception (probably acceptable in a larger number of religions). Educating girls so they are independent, can earn a living in a modern economy rather than be dependent on a guy and having 5 or more kids. Data from World Bank: https://data.worldbank.org/indicator/sp.dyn.tfrt.in?most_recent_value_desc=true

62 https://www.ted.com/talks/chad_frischmann_100_solutions_to_climate_change/transcript?language=en#t-821596

Country	Most Recent Year	Most Recent Value	
Niger	2017	7.2	
Somalia	2017	6.2	
Congo, Dem. Rep.	2017	6.0	
Mali	2017	6.0	
Chad	2017	5.8	
Angola	2017	5.6	

Well… Data… Probably easier to go from 7 to 6 than from 1 to 0. Meanwhile in Sweden the "BirthStrike".

Cannibalism?

Someone is getting a lot of press by suggesting:

- *"Scientist suggests eating human flesh to fight climate change"*[63]
- *"A Swedish scientist suggested the climate crisis could lead people to consider eating human flesh. It's not the first time a scientist has suggested the idea."*[64]
- *"Scientist suggests new response to climate change: cannibalism"*[65]

I could suggest "humanitarian killing", would that get me some eyeballs, https://en.wikipedia.org/wiki/Succès_de_scandale ?

Let's stick to actionable solutions that are practical right now.

Keep the nuclear power for now

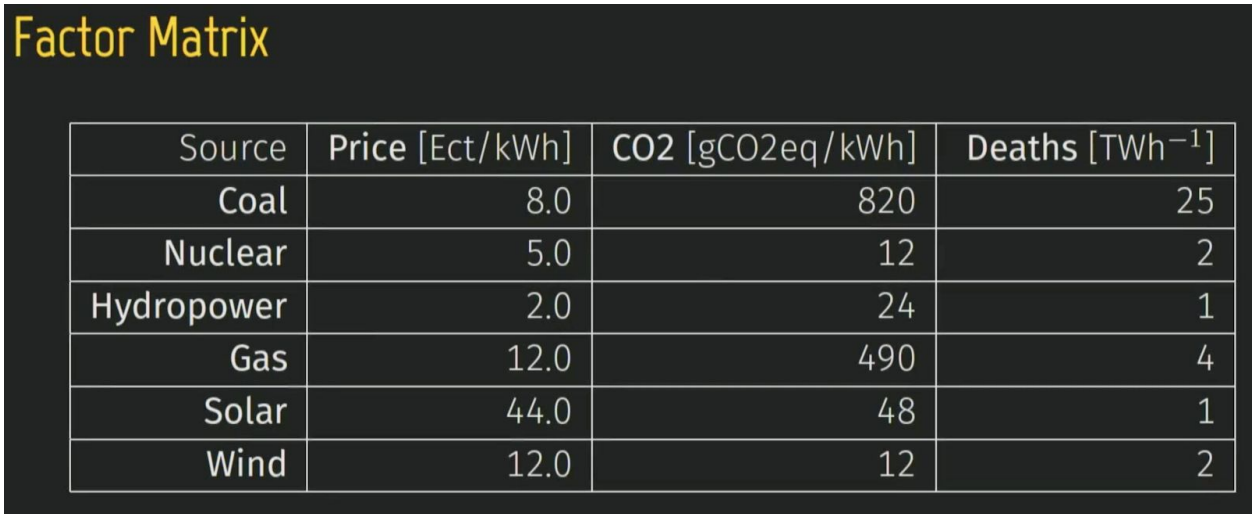
I've seen the talk delivered by sufficiently qualified person that was focusing on raw data[66].

Compare these two:

- https://en.wikipedia.org/wiki/Dam_failure

[63] https://nypost.com/2019/09/09/scientist-suggests-eating-human-flesh-to-fight-climate-change/
[64] https://www.businessinsider.com/cannibalism-eating-human-flesh-climate-change-2019-9
[65] https://futurism.com/the-byte/scientist-cannibalism-climate-change
[66] https://twitter.com/marsxrobertson/status/1167837086688468992

- https://en.wikipedia.org/wiki/Nuclear_and_radiation_accidents_and_incidents



Factor Matrix

Source	Price [Ect/kWh]	CO2 [gCO2eq/kWh]	Deaths [TWh^{-1}]
Coal	8.0	820	25
Nuclear	5.0	12	2
Hydropower	2.0	24	1
Gas	12.0	490	4
Solar	44.0	48	1
Wind	12.0	12	2

Nuclear power is not ideal but opening new coal mines and coal plants isn't much better. Until we transition to the model of economy and energy production we should keep existing nuclear power plants.

"We Work the Black Seam" by Sting released in 1985, a tribute to miner's strike[67][68]:

> *One day in a nuclear age*
> *They may understand our rage*
> *They build machines that they can't control*
> *And bury the waste in a great big hole*

Another chart showcasing the emissions from nuclear, courtesy of the guys who delivered a brilliant game *"Planet A — The Tragedy of the CO_2mmons"*[69][70][71][72]

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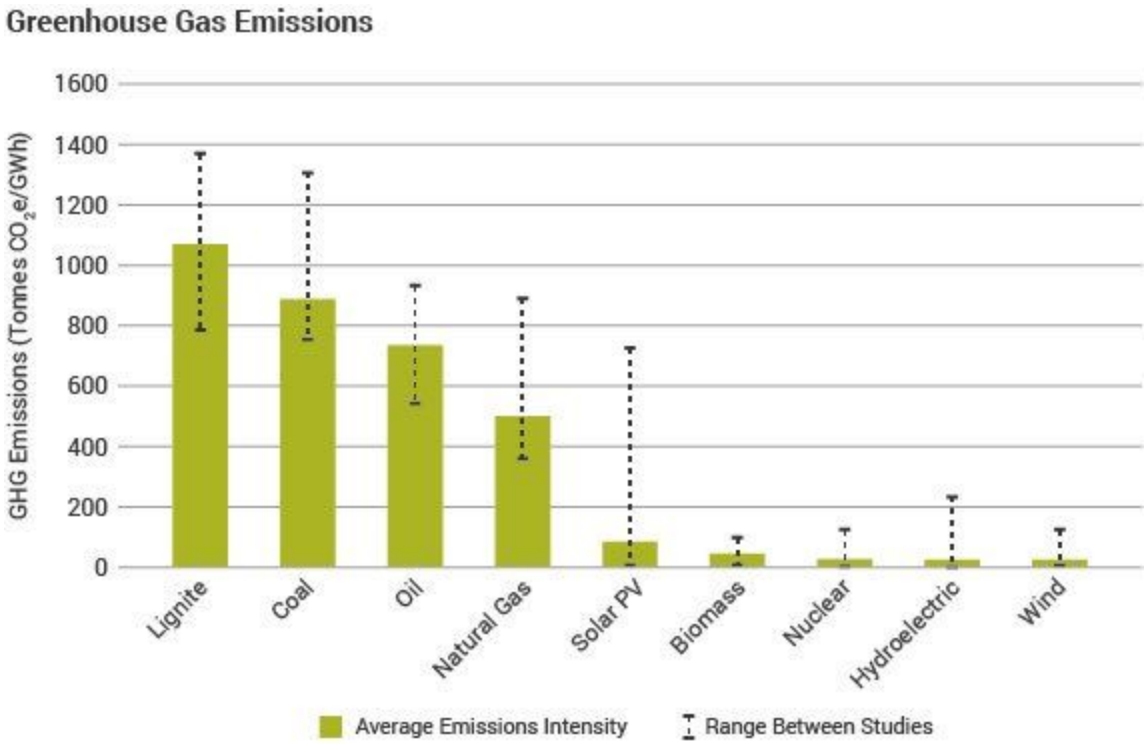
[67] https://en.wikipedia.org/wiki/UK_miners'_strike_(1984%E2%80%9385)
[68] https://en.wikipedia.org/wiki/The_Dream_of_the_Blue_Turtles
[69] https://medium.com/ethberlin/introducing-planet-a-the-tragedy-of-the-co%E2%82%82mmons-90e35c229475
[70] https://events.ccc.de/camp/2019/wiki/Projects:Planet_A_%E2%80%94_The_Tragedy_of_the_CO%E2%82%82mmons
[71] https://twitter.com/marsxrobertson/status/1165594718979481600
[72] https://github.com/social-dist0rtion-protocol/planet-a



Lignite is also called “brown coal”. Germany is phasing out their nuclear power, they already closed down the coal mines but that’s in favour of coal imports and trying to cut down the forest and use something worse than coal:

- https://en.wikipedia.org/wiki/Hambach_surface_mine
- https://en.wikipedia.org/wiki/Hambach_Forest

> *“Hambach Forest is an ancient forest located in North Rhine-Westphalia, western Germany, near Buir between Cologne and Aachen. It is planned to be cleared as part of the Hambach surface mine by owner RWE AG. There have been ongoing protests and occupations to prevent this since 2012.”*

In Australia they plan to open this coal mine: https://en.wikipedia.org/wiki/Carmichael_coal_mine

In Poland they just opened a new one:
https://www.jsw.pl/en/media/news/article/new-mine-in-jsw/

Search for “china build coal power plants” and it is scary, business as usual.

Any new construction project must offset CO_2 10x

Some infrastructure projects are required. Maybe they are not perfect, maybe they will cause some collateral damage but not creating them will make things even worse.

As a rule of thumb: CO_2 10x

Check https://en.wikipedia.org/wiki/Planning_gain and “section 106”

There are two infrastructure projects in the UK: HS2 and Silvertown Tunnel.

I get the idea that they are not perfect and during construction there will be some damage to the environment but in the long run they are likely to bring a series of benefits. Please consider all the facts, all the factors, make sure all voices are heard and accounted for.

Silvertown Tunnel?

As someone who lives in South-East London and is experiencing Blackwall Tunnel traffic *(and pollution generated by the cars being stationary)* I actually really want this tunnel to happen, it will be a gamechanger.

I believe that investment in infrastructure is a good investment that will enhance London and the whole region.

We need to properly assess the pros and cons. Maybe building the tunnel is not super great but not building is actually much worse?

Check population of Norway. Check population of London. Currently the deepest tunnel: https://en.wikipedia.org/wiki/Eiksund_Tunnel

> *The tunnel is 7,765 metres (25,476 ft) long and reaches a depth of −287 metres (−942 ft), which makes it the deepest undersea tunnel of its kind in the world.*
>
> *The tunnel was built as part of a large project including 3 tunnels and a bridge connecting several islands to the mainland. The bridge–tunnel complex serves the municipalities of Herøy, Sande, Ulstein, Hareid, Ørsta, and Volda, which together have over 40,000 inhabitants.*

See another tunnel in the making: https://en.wikipedia.org/wiki/Rogfast

> *The project will be a world record with respect to its 27-kilometre (17 mi) length and its maximum depth of 392 metres (1,286 ft) below sea level.*

Before suggesting alternatives such as *“self driving cars will have AI agents allowing them to drive in convoys”* do a quick reality check.

HS2

https://www.theguardian.com/environment/2019/apr/27/extinction-rebellion-activists-scale-trees-in-anti-hs2-protest

> *"HS2 will create extra capacity on our transport network, taking cars and lorries off the road. The project will also deliver a new green corridor made up of more than 650 hectares of new woodland, wetland and wildlife habitats alongside the line."*
>
> *"More than 7m new native trees and shrubs will be planted to help blend the line into the landscape and leave a lasting legacy of high-quality green spaces all along the route. HS2 Ltd is working closely with the Environment Agency and Affinity Water to ensure construction activities do not adversely affect the flow, level or quality of surface waters and groundwater in the Chilterns-Colne Valley area."*

http://stophs2.org/facts - who has better facts? Can we find a middle ground?

7m new trees, green corridor… Can we have a cycle route alongside the HS2 as well? It could be used by emergency / servicing vehicles as well as open regions for cycling tourism.

If you look at - https://www.theclimatemobilization.org/climate-mobilization - "high speed electrified railroads" are suggested. But maybe their proposal is US centric, maybe in the UK our train network is good enough?

Insects

BBC article "UN urges people to eat insects to fight world hunger"[73]:

> *"Insects are everywhere and they reproduce quickly, and they have high growth and feed conversion rates and a low environmental footprint"*
>
> *"The authors point out that insects are nutritious, with high protein, fat and mineral content."*

FAO (Food and Agriculture Organisation) report "Edible insects - Future prospects for food and feed security"[74].

People have been eating insects everywhere, all the time. It's only recently that it is not cool.

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[73] https://www.bbc.co.uk/news/world-22508439
[74] http://www.fao.org/3/i3253e/i3253e00.htm

https://en.wikipedia.org/wiki/Food_and_drink_prohibitions - we will have to rethink our relationship with food, insects are pretty “acceptable” in my book.

Tim Ferris was promoting Exo protein bars made of crickets on his podcast:

- https://www.kickstarter.com/projects/exoprotein/exo-protein-bars-made-from-cricket-flour
- https://venturebeat.com/2014/09/23/1m-for-cookies-made-from-crickets-tim-ferris-thinks-these-will-jump-into-our-diets/

2. Fake News

Matter so important it deserves its own chapter.

In principle, I’m for full freedom, liberty, voluntaryism, free speech.

At the same time, there are certain actions that are dangerous.

Flat Earth is not dangerous and I couldn't care less.

Climate change is affecting everyone and creates a dangerous situation. There are certain people who are prepared to take action to avoid climate catastrophe but if they are unsure if this is really for real?

To get this issue out of the question will help align everyone on the same page.

https://en.wikipedia.org/wiki/Paradox_of_tolerance - I’m tolerant but I’m not tolerating intolerance. Kind of paradoxical, right?

> *“The paradox of tolerance states that if a society is tolerant without limit, its ability to be tolerant is eventually seized or destroyed by the intolerant. Karl Popper described it as the seemingly paradoxical idea that, "In order to maintain a tolerant society, the society must be intolerant of intolerance." Popper took pains to make clear that he did not mean the expression of intolerant words and ideas, but in fact the opposite: They who must not be tolerated are those who wish to silence discussion and debate.”*

Example of fake news

https://twitter.com/realdonaldtrump/status/1094375749279248385 - I reported some related tweets as abusive (deceptive), your version of reality is likely to be different now.

At first, I thought it is an irony, parody, provocation. That lady is pretty serious about climate change denial. Twitter gives them a platform because climate change denial is not illegal.

I really wish we were discussing on the basis of facts, truth, reality, scientific consensus. Otherwise, legitimate people who could provide meaningful comments to Green New Deal are disputing if climate change is happening or not.

Another example of fake news

That's why the law against "fake news" and "climate change denial" is needed. Check interview with Bill Gates from 20 years ago[75]:

> *"It's all there: there's no way of finding out whether this stuff has any bottom to it or whether someone has just made it up."*

Growing alfalfa (water heavy crop) in the middle of a desert during drought is ecocide and should be treated as such.

California Alfalfa & Forage Association - http://www.calhay.org/ - you have land, you have the machinery, buildings and infrastructure. Surely you can grow another crop…

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75 https://www.huffingtonpost.co.uk/entry/terry-pratchett-fake-news-bill-gates_n_5cee60e6e4b0793c23480d37

Deep fakes

“Fraudsters deepfake CEO’s voice to trick manager into transferring $243,000”[76]

Deep fake with Obama: https://www.youtube.com/watch?v=cQ54GDm1eL0

Stay woke bitches!

BREXIT was a “democratic” vote?

Extinction Rebellion is “Beyond Politics”. I totally support this stance. The following chapter is about technicalities and supporting evidence why “fake news” should be banned.

It was “democratic” in the same way Hitler was “democratic”. Check the voting card[77]:

[76] https://thenextweb.com/security/2019/09/02/fraudsters-deepfake-ceos-voice-to-trick-manager-into-transferring-243000/

[77] https://en.wikipedia.org/wiki/File:Stimmzettel-Anschluss.jpg

It was a military technology deployed towards citizens of the UK:

- https://en.wikipedia.org/wiki/Psychological_warfare
- https://en.wikipedia.org/wiki/Psychological_operations_(United_States)
- https://en.wikipedia.org/wiki/Hybrid_warfare
- https://en.wikipedia.org/wiki/Psychometrics

They illegally obtained a large number of data points about each voter:

- Someone is religious - message about Islam for them.
- Someone has health issues - message about NHS for them.
- Someone likes cats - use cat image in the advert for them.

Blade Runner, Minority Report, all these futuristic movies becoming pretty much a reality.

It's just like playing chess and knowing your opponent's next move, or breaking Enigma and decode U-boot orders during the battle of the Atlantic - pretty much a game changer.

You should definitely watch "The Great Hack": https://youtu.be/iX8GxLP1FHo

Laws are made in response to the event, there was no taxation on Bitcoin before Bitcoin. There were no laws explicitly saying *"you cannot do _____"* because the lawmakers were not aware _____ is possible. No one really knew it is happening, only after some guys blew the whistle.

One can debate whether BREXIT is good or bad. One can debate whether a second vote is desirable. It perfectly possible to realise that actually we we did know the full scope of consequences, as the campaign was focused on "fake news".

I'm pretty sure very few voting for BREXIT realised the trouble of the North Ireland border. Was it a part of the debate during the campaign?

HOUSE OF COMMONS

Digital, Culture, Media and Sport Committee

Oral evidence: Fake News, HC 363

Source:
https://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/digital-culture-media-and-sport-committee/fake-news/oral/81592.pdf

> *"I found documents from Nigel Oakes, the co-founder of the SCL Group, who was in charge of our defence division, stating that the target audience analysis methodology, TAA, used to be export controlled by the British Government. That would mean that the methodology was considered a weapon—weapons grade communications tactics—which means that we had to tell the British Government if that was going to be deployed in another country outside the United Kingdom."*

SCL Group[78] is the parent company to Cambridge Analytica.

In my opinion, it wasn't a democratic vote, It was a military technology deployed towards citizens of the UK.

[78] https://en.wikipedia.org/wiki/SCL_Group

Current war is happening on Twitter

- WW1 in trenches
- WW2 blitzkrieg
- cold war espionage
- these days war is happening on Twitter and Facebook

https://blog.twitter.com/en_us/topics/company/2019/information_operations_directed_at_Hong_Kong.html

> *"We are disclosing a significant state-backed information operation focused on the situation in Hong Kong, specifically the protest movement and their calls for political change."*
>
> *"This disclosure consists of 936 accounts originating from within the People's Republic of China (PRC). Overall, these accounts were deliberately and specifically attempting to sow political discord in Hong Kong, including undermining the legitimacy and political positions of the protest movement on the ground."*

Not only China (PRC) and Hong Kong: United Arab Emirates & Egypt, Saudi Arabia, Spain, Ecuador:
https://blog.twitter.com/en_us/topics/company/2019/info-ops-disclosure-data-september-2019.html

See the Facebook FTC fine:
https://www.theverge.com/2019/7/12/20692524/facebook-five-billion-ftc-fine-embarrassing-joke

> *"Here's another way to say it: the biggest FTC fine in United States history increased Mark Zuckerberg's net worth."*

The fine is related to data misuse and Cambridge Analytica scandal, the amount was so little that the stock price went up, market was expecting much worse news. Or may it was the removal of uncertainty that made the stock increase in price.

Here is a statement from the president of Microsoft[79]:

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79 https://www.npr.org/2019/09/13/760478177/microsoft-president-democracy-is-at-stake-regulate-big-tech

> *"Today, the tech giants — whose tools have been used to interfere in fair and free elections — are posing a much bigger threat to the political stability of many countries, including the U.S."*

The climate will be decided on the media. That's why one of the core demand of Extinction Rebellion is to TELL THE TRUTH: http://tellthetruth.media/

I wrote a super lengthy thread on Kleros Forum[80]. In this book I've summarized the key findings. I think a "reality filter" can work, read on...

"Reality Filter" incentives

"Reality Filter" is a working name of a Chrome (or Brave, or Firefox, or Opera, or Safari) Extension that would help annotate the web.

I am aware of this tool - https://web.hypothes.is/ - that got some serious funding but I think they focus more on academia rather than media outlets.

Realistically speaking we will never know the truth 100% times with 100% confidence but the information that something is questionable, disputable, subject to interpretation, not telling the full picture, focusing no out-of-context detail that is misleading - I have my own brain to analyse additional information.

I'd be happy to support "Reality Filter" with $10 monthly subscription so that army of internet trolls have a few cents each to highlight "fake news".

"real news" propaganda

https://twitter.com/thejuicemedia/status/1168771110814437377 - this video is super funny, the whole channel is full of genuine satire.

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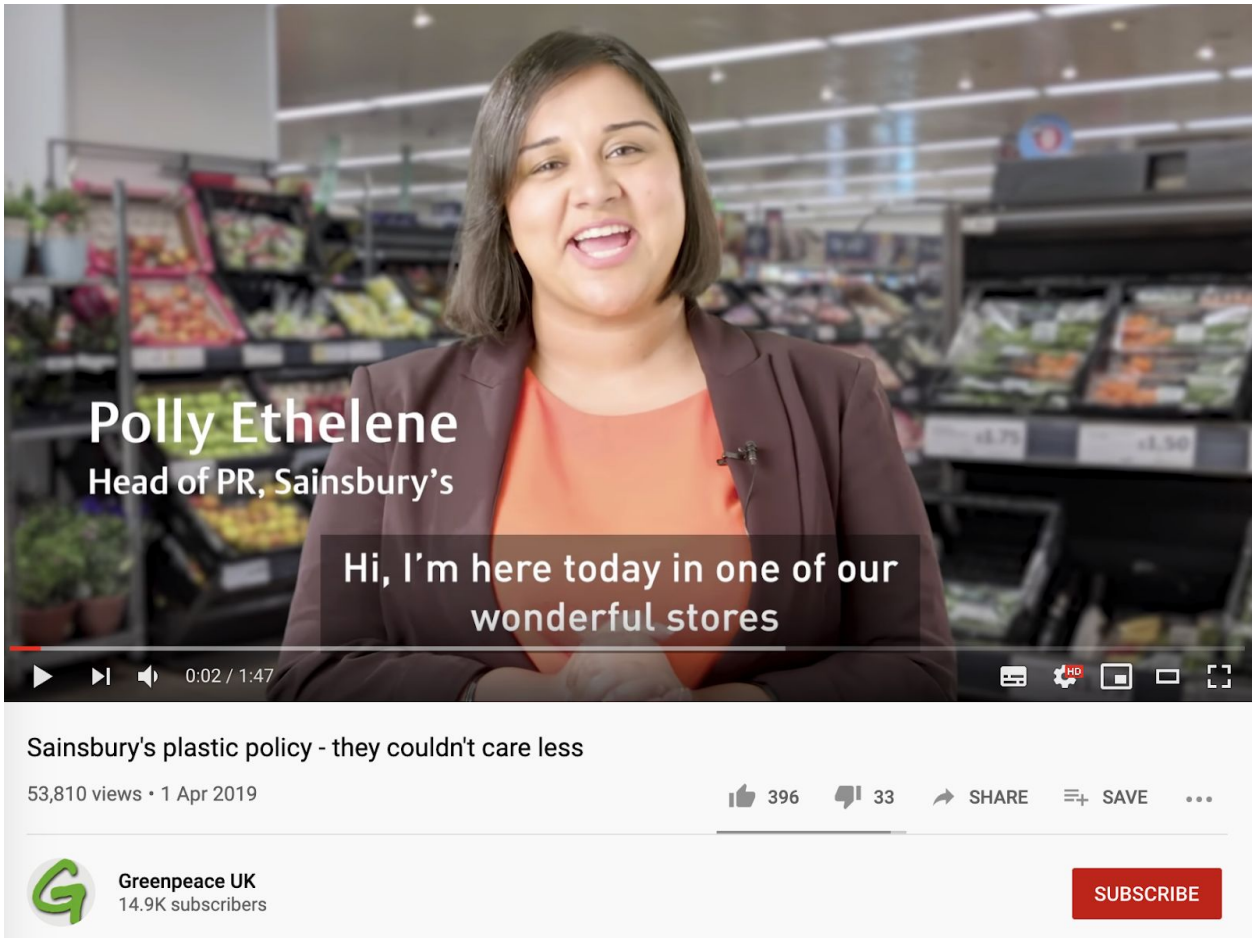
80 https://forum.kleros.io/t/extending-fake-news-prevention-mechanism-banning-fake-news-just-like-you-ban-chemical-weapons-land-mines-and-nukes/249

This video from Greenpeace is also funny, also shareable, with viral potential: https://www.youtube.com/watch?v=BvndtjAIQ5I



3. Digital security, online infrastructure, phone safety

The recently released guide is truly amazing, specific, detailed. It is exactly to the point, actionable, exactly what you need to know:
https://cloud.organise.earth/apps/onlyoffice/s/QMHTinJKr4TNNQP

OCTOBER REBELLION PHONE LOCKDOWN

I also collected some thoughts about digital communication: **https://genesis.re/comms**

4. Plan B

Initially described on the wiki[81], alongside many other articles in the Climate Change category.

In the intro to this book I mentioned COP24 and losing hope - Plan B was created.

Extinction Rebellion restored my hope. We can still save the Planet A.

We will still have time to figure out Plan B but it's good to start setting up the foundation now.

Why?

Why people are migrating? Not enough food, instability, seeking better prospects.

We cannot possibly accommodate millions of refugees, we need to make the whole regions habitable again.

Make earth great again!

One of the top policies - repurposing military technology - refers to manufactured housing.

[81] https://genesis.re/wiki#Plan_B

Collaboration AND competition (anti rivalry)

The whole trick - incentive transfer of knowledge rather than cut throat competition and sabotage.

Milestones. Checkpoints. Metrics. Scoring. Reviews.

Open source from the ground up, including the meta-design of the competition - just like the X-Prize visioneering[82], anyone could come and design metrics.

Periodical checkpoints to compare the notes, do the scoring, allow less successful teams to catch-up and resume another round of collaboration AND competition.

More opportunities to learn from each other. Sharing knowledge to maximize the impact.

Avoiding dead ends, putting teams back on track.

Ensuring the right incentives to share the progress at all stages of the program.

Materials and technology

Now we have much more than just stone, wood, steel, glass.

Some of them I had a chance to experience myself, pretty revolutionary:

- Nanotechnology, superconductors, graphene, aerogel, carbon fiber
- GoPro suction - if you touch it with your hand it isn't even sticky, but on a flat surface...
- Facebook 3D-printed drones beaming the internet through the lasers - so incredibly lightweight, staying up in the air for months
- Sugru
- Space blanket

Elements of the design

Food

https://www.astroplant.io/
http://growing-underground.com/
Growing cycles around the year, totally possible.

[82] https://www.xprize.org/visioneering

Water

Recycling and harvesting. Filtering.
Example: https://showerloop.org/

Oxygen

Not applicable in the Earth version. Assume we have an atmosphere. Not required for MVP. Might be handy in extended version for space exploration.

Energy

Efficient use, store and production.

Waste

Leave no trace policy. Can be used as manure or solid fuel.

X Prize

In the meanwhile - polishing the idea, being resourceful with what is available, I hope X Prize will pick up this idea.

https://en.wikipedia.org/wiki/Ansari_X_Prize#Motivation

> *Diamandis developed a fully formed idea for a "suborbital space barnstorming prize", and set an initial goal of finding backers to support a US$10 million prize.*

I totally subscribe to the **bold** and **abundance** mindset.

The economy of the scale

In this iteration, we design a self-sustainable unit. Further down the line, it is a perfectly valid option to have shared resources, such as town hall for groups of 10+ units.

Plan B vs BaseX

When sharing the concept of "Plan B" with others, a common reaction is - that's something Elon Musk is doing, making humanity the interplanetary species.

SpaceX - mission to Mars. But who will design the settlement?

Also BaseX, decimal system, humans have ten fingers. X is Roman numerals mean 10, spot on.

XPrize[83] has "X" in their name:

Blueprint of a civilization

The concept could be modular and create aggregate and use of common parts - a few capsules coming together and making use of shared equipment (economy of scale).

Learning how to live on Earth before spreading out to other space.

A few decades from now you can just hop into the capsule and float in the space - either independently or as a part of a compound.

Bir Tawil

Bir Tawil[84] is a piece of land that noone claims:

> *“Its terra nullius status results from a discrepancy between the straight political boundary between Egypt and Sudan established in 1899, and the irregular administrative boundary established in 1902. Egypt asserts the political boundary, and Sudan asserts the administrative boundary, with the result that the Hala'ib Triangle is claimed by both and Bir Tawil by neither. In 2014, author Alastair Bonnett described Bir Tawil as the only place on Earth that was habitable but was not claimed by any recognised government.”*

With the Plan B technology we could totally legally create a new country.

[83] https://en.wikipedia.org/wiki/X_Prize_Foundation
[84] https://en.wikipedia.org/wiki/Bir_Tawil

Of course both countries prefer more land and more coastline. Of course none of the countries wants the smaller thing. Liberland situation was created in the very same way.

Danube river is an international waterway, rivers sometimes take a shortcut and there is a pocket of land. Just like with Bir Tawil, countries prefer more land, and to say “Liberland is mine” would mean something else is not yours. As a result, noone wants it...

Picture taken at CCCAMP19, exactly 4 years later after my initial induction to Liberland.

5. Liquid Democracy

Let's begin with a story of horses and rockets.

Can you imagine that our future Mars civilization will be determined by the size of a horse? Roman roads - two horses in width. Railroads same width. Tunnels made to measure. Size of the rocket flying to Mars limited by the size of component that goes through the tunnel, because of the size of a horse? This story has some truth in it, you can debate whether "determined" or "influenced" is the right term[85].

The current model of democracy - voting for representatives once every few years.

Voting for delegates made sense in 1800. Ship from UK to US took a couple of weeks to cross the Atlantic. To have a delegate means you do not have to travel that often to make your point across, the representative was there.

If we assume that technology has improved, now we have the internet, Facebook, iPhones and Androids *(that completely destroyed social fabric of society)* maybe we can acknowledge that democracy should also evolve?

Current democracy in the UK and in the US

First-past-the-post[86] in the UK that is an open invitation to tactical voting[87]

Electoral college[88] in the US and see what happened in 2000 when counting votes in Florida[89]:

"The Florida vote was ultimately settled in Bush's favor by a margin of 537 votes"

Al Gore ultimately lost the battle, he continued to work on environmental issues, together with IPCC got the Nobel Peace Prize in 2007[90]

Liquid Democracy explained in simple terms

5 minutes YouTube video: https://youtu.be/fg0_Vhldz-8

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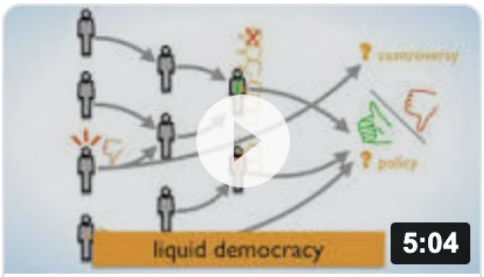
[85] http://www.astrodigital.org/space/stshorse.html
[86] https://en.wikipedia.org/wiki/First-past-the-post_voting
[87] https://en.wikipedia.org/wiki/Tactical_voting
[88] https://en.wikipedia.org/wiki/United_States_Electoral_College
[89] https://en.wikipedia.org/wiki/2000_United_States_presidential_election_recount_in_Florida
[90] https://en.wikipedia.org/wiki/2007_Nobel_Peace_Prize



Liquid Democracy In Simple Terms

For example - I know little about abortion. I'm not a woman, not a pregnant woman, not a medical specialist, not a religious authority. I will happily delegate my vote in that vote towards a friend who is a doctor and is much more informed. They can also delegate their vote is even more informed, say gynecologist expert. For that reason "liquid democracy" it is also known as delegative democracy.

Directly from Wikipedia definition: https://en.wikipedia.org/wiki/Liquid_democracy

> *Voters can either vote directly or delegate their vote to other participants; voters may also select different delegates for different issues. In other words, individual A of a society can delegate their power to another individual B – and withdraw such power again at any time.*
>
> *Liquid democracy lies between direct and representative democracy. In direct democracy, participants must vote personally on all issues, while in representative democracy participants vote for representatives once in certain election cycles. Meanwhile, liquid democracy does not depend on representatives but rather on a weighted and transitory delegation of votes. Liquid democracy through elections can empower individuals to become sole interpreters of the interests of the nation. It allows for citizens to vote directly on policy issues, delegate their votes on one or multiple policy areas to delegates of their choosing, delegate votes to one or more people, delegated to them as a weighted voter, or get rid of their votes' delegations whenever they please.*

Citizens' Assembly

Still frame from the informational video about three demands: https://youtu.be/4s9jfkWz72g

I understand the demand of "Beyond Politics" - Extinction Rebellion is not a political movement. At the same time, when overhauling economy, society we can do something with the governance model as well… Permanently, not just only for a few weeks.

See the XR position: https://www.youtube.com/watch?v=cGNkd7MtpDw

XR's position on Brexit and a General Election | Extinction…

3.3K views • 20 hours ago

Peaceful takeover

Nations taking over:

- https://en.wikipedia.org/wiki/Independence_Day_(United_States)
- https://en.wikipedia.org/wiki/Indian_Independence_Act_1947
- https://en.wikipedia.org/wiki/Decolonisation_of_Africa
- https://en.wikipedia.org/wiki/Dissolution_of_the_Soviet_Union
- https://en.wikipedia.org/wiki/Breakup_of_Yugoslavia

People revolting:

- https://en.wikipedia.org/wiki/Peasants%27_Revolt
- https://en.wikipedia.org/wiki/Cornish_rebellion_of_1497

Most recent attempt:

- https://en.wikipedia.org/wiki/2014_Scottish_independence_referendum

The turnout of 84.6% was the highest recorded for an election or referendum in the United Kingdom since the introduction of universal suffrage.

I believe that it is possible to peacefully and legally become the government.

Voting without government announcing the vote

I know this is a radical idea. It is still possible without the government declaring a new vote. It should be enough for 50% of the guys registered for vote to deliver the vote to the nearest train station.

Enough to prove that you are a human and you live in the UK. A few items required:
1. Copy of passport / national ID / driving licence / birth certificate
2. Proof of address *(bank statement / utility bill)*

On the envelope put: **"REMAIN EUROPE"** or **"BREXIT LEAVE"** (or any other issue)

We will ask United Nations observers to count the votes.
We will ensure that it is legally binding.
We are no longer influencing the government.
We are the government.

Why train station, not a polling station? Train stations are well known, well defined.

Everyone knows where the nearest train station is + easily transportable to London.

Not everyone knows where is the polling station (libraries, schools, churches, town halls)

I am totally aware that the likehood of such event is low, at the same it's not impossible.

I can imagine overall mobilisation, people going to a train station with the copy of their passport / driving licence / national ID and a proof of address to cast a vote. At the same time - it's rather complicated, unnecessary, convoluted. Too many dependencies, too many other priorities.

Just bear in mind it wasn't democratic vote, see the chapter about "fake news".

6. Various random bonus miscellaneous notes

This is an all-you-can-eat so pick and choose the ideas that you like. I mostly agree with most of them, otherwise I wouldn't be sharing them. Use your critical judgment and when in doubt DYOR - do your own research, always do your own research.

Post-capitalism

https://en.wikipedia.org/wiki/Post-capitalism
https://en.wikipedia.org/wiki/Post-scarcity_economy

https://en.wikipedia.org/wiki/Anti-rival_good
https://en.wikipedia.org/wiki/Network_effect
https://en.wikipedia.org/wiki/Metcalfe`s_law

J.P. Morgan wasn't a charitable guy:

https://en.wikipedia.org/wiki/History_of_rail_transportation_in_the_United_States#Expansion_and_consolidation_(1878–1916)

> *"New York financier J.P. Morgan played an increasingly dominant role in consolidating the rail system in the late 19th century. He orchestrated reorganizations and consolidations in all parts of the United States. Morgan raised large sums in Europe, but instead of only handling the funds, he helped the railroads reorganize and achieve greater efficiencies. He fought against the speculators interested in speculative profits, and built a vision of an integrated transportation system."*

Certain things make sense if they are unified.

Why trains are so expensive?

Look how many train companies operate in the UK:
https://en.wikipedia.org/wiki/List_of_companies_operating_trains_in_the_United_Kingdom

Ticket machines have so many options.

I have zero loyalty to train brands - just get me from A to B, on time, without spending a small fortune. (trains in the UK are expensive, flying around Europe is much cheaper)

As I write these words, it's 23:09 on Thursday. The cheapest flight from London to Edinburgh for tomorrow is £49 only. The cheapest train[91] I could find is £89.

I have zero loyalty to electricity providers. Previously it was communism vs capitalism. I'm not into communism camp, I'm into post-capitalism as there is a certain limit to how much you can grow in terms of GDP. That's why in the previous chapters suggested a new metric.

This is a paradigm shift on many levels. I believe that blockchain is making it possible. Just imagine a situation where 66 million citizens of the UK have shares in the rail network. This level of ownership and decision making is not possible before.

The change will not happen overnight, and I dare to speculate the change is already happening, more people are waking up…. Let's see how the situation will evolve.

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[91] http://ojp.nationalrail.co.uk/service/timesandfares/London/EDB/tomorrow/0800/dep?directonly

“War on drugs”

It is with regret that the Prison Guards Worker Union *(several thousand people)* is shaping the consciousness of the planet. Why? It’s primarily them who have incentives to keep prison–industrial complex[92] going.

I’m financially supporting Psychedelic Society, voting with my wallet is more powerful than likes on Facebook.

I understand the public perception, the generation of my parents is in the camp “drugs are bad”.

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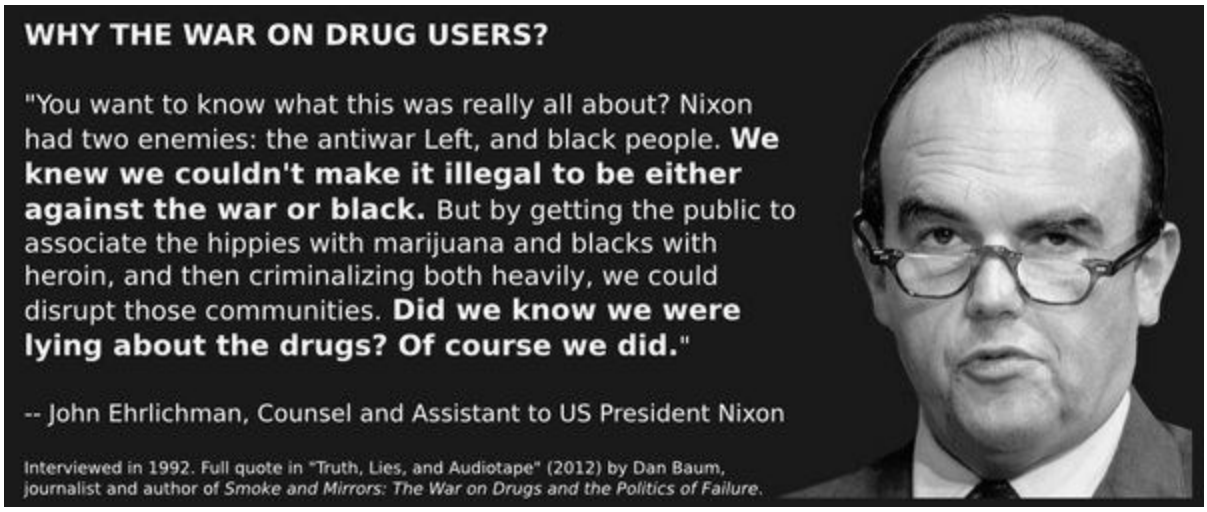
[92] https://en.wikipedia.org/wiki/Prison–industrial_complex

I'm in the camp "drugs can be also bad" - without education, without experience, unsuitable set & settings, unknown dosage, unknown purity, pre-existing mental health conditions, combined with other substances such as alcohol, in the atmosphere of doing something illegal and risking time in jail - these are potentially harmful circumstances

With the proper preparation, education, guidance: 80% of the participants said it's one of the top 5 most important (meaningful) events of their life and 50% said it's the most important (meaningful).

I'm in the camp choice, freedom, education, I'm not in the camp of "fake news" propaganda of the 1960s



Effective altruism

https://www.effectivealtruism.org/

> *"Effective altruism is about answering one simple question: how can we use our resources to help others the most?"*
>
> *"Rather than just doing what feels right, we use evidence and careful analysis to find the very best causes to work on."*

My favourite anti-example: helping children working on toxic waste dumping ground by providing them with protective footwear. It does not solve any underlying problems, such as dumping waste, poverty, lack of education.

Another anti-example: donating life jackets for refugees from Syria to enhance the safety of their sea travel. We need to solve the underlying problems and that is why I suggested Plan B -

initially for 1% to have a backup option, further down the line the innovation and economy of the scale should make possible to build a human habitat for 1/100 cost of a missile that destroyed it in the first place.

Buying clean energy?

I'm not sure if an individual choosing *"green energy supplier"* is making any difference.

The logic is as follows: **higher demand for green energy = less demand for other energy.**

Less demand, therefore lower price, those who are polluting the most now have fewer incentives to switch. Supply and demand, elementary market forces.

Divesting from fossil fuels?

“Fossil fuel divestment has ‘zero’ climate impact, says Bill Gates”

The article is behind a paywall but check this comment[93]:

> *“Divestment also results in less shareholder oversight of emission heavy companies because environmentally conscious investors are selling their shares to investors with less scruples.”*
>
> *“According to Fossil Free, asset managers with about 10 trillion under management have committed to divesting. If you assume 10% of that is tracking something like the S&P 500, then these investors have sold about 80 million shares of Chevron. In 2018, shareholders introduced a proposal asking Chevron to limit its methane emissions. That proposal failed with 46% of the vote. 80 million shares would have been enough to swing the vote to 54% in favor.”*

As you can see, global economy is a complex intertwined system…

False illusion

How many times have you heard “save paper” or “unplug chargers”?

It really pisses me off, I don’t print because ink prices are extortionate, the business model of hardware companies depends on it.

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[93] https://news.ycombinator.com/item?id=20998948

Regarding chargers, there is a law - https://en.wikipedia.org/wiki/One_Watt_Initiative - that tells how much energy it is allowed to use in the standby mode. Do some math, know how much you are saving, make your judgment based on factual data[94]:

> *The total vampire power draw of our power strip, combined with chargers for an iPhone 6, iPad Air, MacBook Air (2013), Surface Pro 2, Samsung Chromebook, and a Nexus 7 measured a grand total of 0.3 watts.*
>
> *Let's assume these are all plugged in 24 hours a day, 7 days a week, over an entire year. There are 8760 hours in a year. That equates to 2.628 kilowatt hours (kWh).*
>
> *According to the EIA, the average cost of electricity in the US is 12.98 cents per kWh. This means that those 2.628 kWh of electricity will cost about 34.1 cents over an entire year.*
>
> *The real cost is actually lower, as you'll be charging your devices with these chargers sometimes, so they won't always be drawing vampire power. You'll probably unplug them to take them with you sometimes, too.*
>
> *Either way, this shows us that the amount of vampire power consumed by your chargers is extremely small and really isn't worth worrying about. If you like the convenience of leaving your chargers plugged, go for it.*
>
> *Yes, it's true that you could save a tiny amount of electricity by unplugging your chargers, but you could save a much larger amount of electricity by looking to heating, cooling, lighting, laundry, your computer and other more significant power drains.*

Why does it bother me? Just like "fake news", I'm affected by it. People who might be willing to do some actual stuff, now can say: "I'm doing my part, I'm unplugging my chargers"

I really wish such factual data approach was more dominant in our society and governance.

Extinction Rebellion and putting pressure on the government - spot on. At this stage, only a change on the government level can suffice.

Acknowledge the power of corporations?

Currently, they can lobby, here is how much Microsoft is spending in European Parliament[95]: €5m

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[94] https://www.howtogeek.com/231886/tested-should-you-unplug-chargers-when-youre-not-using-them/
[95] https://lobbyfacts.eu/representative/60239386204445e2b0fb38cada46b204/microsoft-corporatio

Surely you can lookup how much money Google, Facebook and similar are spending in the US Congress.

On the other hand, check a country like Nauru[96]:

> *Nauru is the third-smallest country in the world behind Vatican City and Monaco, making it the smallest state in the South Pacific Ocean, the smallest state outside of Europe, the smallest island state, and the smallest republic. Additionally, its population of 11,347 is the world's third smallest, after the Vatican and Tuvalu.*
> *By measure of mean body mass index (BMI) Nauruans are the most overweight people in the world; 97 per cent of men and 93 per cent of women are overweight or obese.*

You can check their Gross Domestic Product.[97]

Who is more powerful: Nauru or Google or Microsoft or Facebook?

Who has more capacity to influence global affairs?

I actually made this posted just before the Burning Man to convince the Google guys to change their logo before the strike:

[96] https://en.wikipedia.org/wiki/Nauru
[97] https://www.cia.gov/library/publications/the-world-factbook/geos/nr.html

DEAR GOOGLE, WITH A SINGLE LINE OF CODE

YOU CAN SHIFT PERCEPTION OF PLANET **A**

PLEASE NOTE, THERE IS CURRENTLY NO PLANET **B**

Dear Googlers, Burnerns, Silicon Valley SingularityU Transhumanism Effective Altruists, please pass this message, United Nations climate science political football consensus failed.

Make your life count

Some guys took it a little bit too far:
https://en.wikipedia.org/wiki/2019_Hong_Kong_anti-extradition_bill_protests

Injuries and arrests	
Death(s)	5 (all suicides)[13][14][15][16][17]
Injuries	2,100+ (as of 15 August 2019)[12]
Arrested	748 (as of 16 August 2019)[18]

During Hong Kong protest 5 people have committed suicides.

While I do not support such desperate actions (non-violent action), pure math and game of numbers tell me - in the protest of 100k people lasting for a month, someone somewhere will die.

Media: tell the truth. **tellthetruth.media** Don't seek sensationalist click-bait titles.

It can be viewed as extreme and according to 10 principles it is not endorsed. Photo of the year: http://100photos.time.com/photos/malcolm-browne-burning-monk

Heathrow Pause and Roger Hallam

Prison is a poor strategy. Unless it was a carefully premeditated action, showing the level of desperation and commitment.

Article from Independent[98]:

> *"Hours after being released from custody on Friday night, Mr Hallam breached his bail conditions of not going within five miles of an airport or possessing any drone-related materials, the group said."*
>
> *"He was re-arrested by London's Metropolitan Police close to the airport's southern perimeter on Saturday."*

If you are released on bail, don't break the conditions a few hours later.

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98 https://www.independent.co.uk/news/uk/home-news/heathrow-drone-protests-extinction-rebellion-roger-hallam-arrest-a9105556.html

If I was assigned to a task of shutting down the airport, I would probably… I'm sorry, I live in a surveillance state, as mentioned in the intro there is a Terrorism Act in force and thoughtcrimes.

Just don't bullshit me that the expansion is good, still frame from the video[99]:

Lake Chad

Most of the people heard about Aral Sea[100]. Not everyone heard about this:

> *"According to the Global Resource Information Database of the United Nations Environment Programme, it shrank by as much as 95% from about 1963 to 1998"*
>
> *"Lake Chad is economically important, providing water to more than 30 million people living in the four countries surrounding it (Chad, Cameroon, Niger, and Nigeria) on the edge of the Sahara."*

90-95% (depending on estimates) is already gone but the "good news" is that it won't disappear overnight, people will have a chance to migrate but that cause a lot of instability in other, also not massively wealthy areas.

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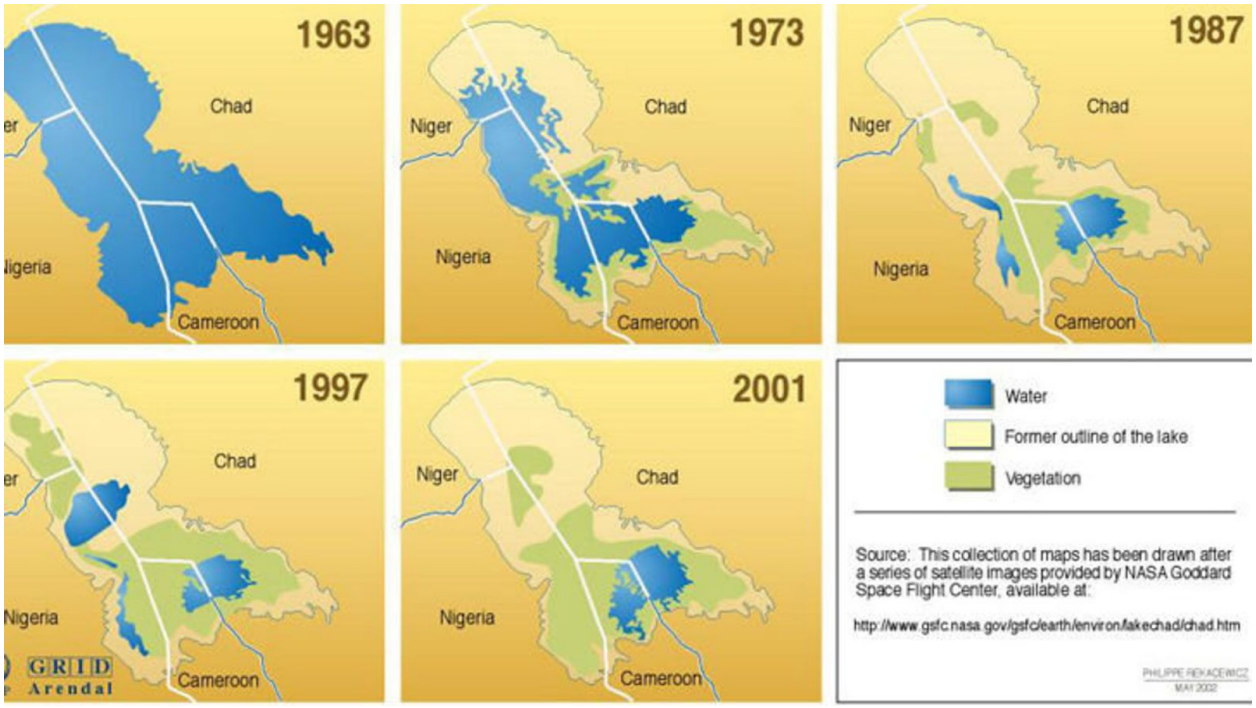
[99] https://www.youtube.com/watch?v=Q0TXsabfoF4
[100] https://en.wikipedia.org/wiki/Vozrozhdeniya_Island



That image is from NASA or some other blog, here is an interesting read on a very telling domain: http://savelakechad.com/analysis-of-transaqua.html

I know very little about economic viability and long-term consequences of doing nothing.

Laguna Salada and Salton Sea

https://en.wikipedia.org/wiki/Salton_Sea - the largest lake in California was created by an engineering accident.

> “The headgates and canals suffered silt buildup, so a series of cuts were made in the bank of the Colorado River to further increase the water flow. The resulting outflow overwhelmed the third intake, "Mexican Cut", near Yuma, Arizona, and the river flowed into the Salton Basin for two years, filling what was then a dry lake bed and creating the modern sea, before repairs were completed.”

Now it is broken again, as food production takes a lot of water and the “lake by accident” is no more:

> *Many other concepts have been proposed, including piping water from the sea to a wetland in Mexico, Laguna Salada, as a means of salt export, and one by Aqua Genesis Ltd to bring in seawater from the Gulf of California, desalinate it at the sea using available geothermal heat, and sell the water to pay for the plan.*

BBC on the subject:
https://www.bbc.co.uk/news/av/magazine-17818361/can-california-s-desert-miracle-be-saved

> *It was once hailed as a "miracle in the desert". Now the Salton Sea is an ecological disaster.*
>
> *Saving the sea could cost billions of dollars. But, as the BBC's Alastair Leithead found out when he visited the area, it could cost more to do nothing*

Why am I mentioning this? We live in the anthropocene - humans embedded their footprint on the planet. We have attained a certain level of consciousness, technology, understanding and we can deploy our skills, money, effort, technology towards something good. Restoring the lake by building a pipe? OK… Doable. Will cost some USD but will provide loads of jobs and restore the ecosytem.

Protest Song

https://en.wikipedia.org/wiki/Protest_song

There was a talk at CCCAMP19[101] was about various cultural things in China.

This song fits our mission perfectly and have very catchy title… TARARA TA-RA-RA

Europe - The Final Countdown
https://www.youtube.com/watch?v=9jK-NcRmVcw

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101 https://events.ccc.de/camp/2019/wiki/Session:Do_you_hear_the_people_sing_%E2%80%93_the_song_of_the_Hong_Kong_protests

We're leaving together,
But still it's farewell
And maybe we'll come back
To earth, who can tell?
I guess there is no one to blame *(we are no blaming, the system is broken)*
We're leaving ground (leaving ground)
Will things ever be the same again?
It's the final countdown
The final countdown
Oh
We're heading for Venus (Venus) *(Earth losing the ability to reflect heat, becoming another Venus)*
And still we stand tall
'Cause maybe they've seen us (seen us)
And welcome us all, yeah
With so many light years to go
And things to be found (to be found)
I'm sure that we'll all miss her so

Copenhagen as an example of Net Zero 2025

https://www.theguardian.com/environment/2013/apr/12/copenhagen-push-carbon-neutral-2025

> *"The Adelgade plant draws cool seawater from an intake pipe located near the picturesque Nyhavn Canal and then delivers the chilled water through insulated pipes to buildings"*

What can work in a city of 500k (Copenhagen) will not work in London.

Just like Amsterdam, there is a long history of planning the city around bike culture.

Just like sprawling suburbs of Los Angeles are built around car culture.

Still we can take loads of inspiration. The heat exchange and cooling coming from the earth - that's one of the cool technologies used in "passive house" buildings.

Iceland as an example of Citizens' Assembly

https://en.wikipedia.org/wiki/2010–13_Icelandic_constitutional_reform

What is possible in a country of 300k may not be feasible in the UK or Germany.

We can still take a lot of inspiration.

Ecocide[102]

> *"Ecocide is criminalized human activity that violates the principles of environmental justice, such as causing extensive damage or destroying ecosystems or harming the health and well-being of a species (including humans). It has not yet been accepted as an international crime by the United Nations."*

ITT[103] (payments for not exploiting)

> *"The initiative was launched in 2007 by president Rafael Correa which offered a perpetual suspension of oil extraction in part of the Yasuni National Park called Ishpingo-Tambococha-Tiputini (ITT) in return for payments of $3.6 billion from the international community (half of what Ecuador would have realized in revenue from exploiting the resources at 2007 prices). It envisioned the transition to a sustainable economy, using the funds to create jobs in such sectors as renewable energy while respecting the region's biodiversity and social equality. However by 2012 only $200 million had been pledged and by 2013 the plan had abandoned and drilling started in 2016."*

[102] https://en.wikipedia.org/wiki/Ecocide
[103] https://en.wikipedia.org/wiki/Yasuní-ITT_Initiative

It got some serious press coverage. We are a decade later, would we behave differently now?

- https://www.washingtonpost.com/news/wonk/wp/2013/08/16/ecuador-asked-the-world-to-pay-it-not-to-drill-for-oil-the-world-said-no/
- https://www.theguardian.com/environment/2010/aug/04/ecuador-oil-drilling-deal-un

Doomsday Clock[104]

> *"The Doomsday Clock is a symbol which represents the likelihood of a man-made global catastrophe. Maintained since 1947 by the members of the Bulletin of the Atomic Scientists, The Clock is a metaphor for threats to humanity from unchecked scientific and technical advances."*
>
> *"In 2019, the Bulletin reaffirmed the "two minutes to midnight" time, citing continuing climate change and Trump administration's abandonment of U.S. efforts to lead the world toward decarbonization; U.S. withdrawal from Joint Comprehensive Plan of Action and Intermediate-Range Nuclear Forces Treaty; U.S. and Russian nuclear modernization efforts; information warfare threats and other dangers from "disruptive technologies" such as synthetic biology, artificial intelligence, and cyberwarfare."*

World Scientists' Warning to Humanity[105]

> *"In November 2017, 15,364 scientists signed a World Scientists' Warning to Humanity."*
>
> *"The Second Notice included 9 time-series graphs of key indicators, each correlated to a specific issue mentioned in the original 1992 warning, to show that most environmental issues are continuing to trend in the wrong direction, most with no discernible change in rate. The article included 13 specific steps humanity could take to transition to sustainability."*

Green New Deal

Is both too extreme and not specific enough.

Next version will be much more acceptable.

- https://en.wikipedia.org/wiki/Green_New_Deal
- https://ocasio-cortez.house.gov/sites/ocasio-cortez.house.gov/files/Resolution%20on%20a%20Green%20New%20Deal.pdf
- https://www.vox.com/videos/2019/6/12/18653754/green-new-deal-video
- https://twitter.com/realdonaldtrump/status/1094375749279248385

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[104] https://en.wikipedia.org/wiki/Doomsday_Clock
[105] https://en.wikipedia.org/wiki/World_Scientists%27_Warning_to_Humanity

Deep Adaptation[106]

"The purpose of this conceptual paper is to provide readers with an opportunity to reassess their work and life in the face of an inevitable nearterm social collapse due to climate change."

Vice[107]:

"The Climate Change Paper So Depressing It's Sending People to Therapy"

Tell the truth. It is fundamentally fundamental. The paper is balanced and well-researched.

Interesting book (based on the review)

How climate pain is being spun into corporate gain: https://www.newscientist.com/article/mg22129621-200-how-climate-pain-is-being-spun-into-corporate-gain/ - review of the book titled "Windfall: The Booming Business of Global Warming"

> *Here we meet private fire-fighters in drought-hit Los Angeles, selling their services to insurance companies, Russian shipping lines eyeing new routes opened up by the melting Arctic, Dutchmen rebuilding flooded islands in the Maldives, and manufacturers of snow-making machines selling their products to distressed winter resorts.*
>
> *Some of the entrepreneurs take advantage of politicians' desire to "do something", even something as screwy as planting a "green wall" of trees to stop the advancing Sahara desert. Others take advantage of human misery by ferrying climate refugees across the Mediterranean in leaky boats, or by building fences to keep people from fleeing Bangladesh for India.*

Haven't read the book yet, but the review is super exciting. Follow the money!

Acceptance and happiness

No path to happiness, happiness is the way, happiness comes from within.

Singularity is near?

We live in a simulation?

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[106] https://www.lifeworth.com/deepadaptation.pdf

[107] https://www.vice.com/en_uk/article/vbwpdb/the-climate-change-paper-so-depressing-its-sending-people-to-therapy

So many factors beyond our control.

Maintaining your own health and happiness is probably the most important thing you can do.

Look after yourself, your family, your community.

7. Affiliate links, thank you for FREE MONEY

This book is free.

Just because this book is free, it does not mean it is worthless.

This book is free because information always wants to be free!

You can still support this project via affiliate links.

These links come at zero cost, actually negative cost to you, getting a discount or something for free.

Stuff I use, vouch and recommend, otherwise they wouldn't be here.

I use my own domain in case the referral link goes down

Coinbase

https://genesis.re/ref/coinbase
You'll both receive £8.28 in Bitcoin when they buy or sell £82.83 or more on Coinbase!

I know that Bitcoin is controversial in environmental circles, but I'm also in technology and governance circles.

https://cbeci.org/faq

> *There is currently little evidence suggesting that Bitcoin directly contributes to climate change. Even when assuming that Bitcoin mining was exclusively powered by coal - a very unrealistic scenario given that a non-trivial number of facilities run exclusively on renewables - total carbon dioxide emissions would not exceed 58 million tons of CO_2, which would roughly correspond to 0.17% of the world's total emissions.*

> *This is not to say that environmental concerns regarding Bitcoin's electricity consumption should be disregarded. There are valid concerns that Bitcoin's growing electricity consumption may pose a threat to achieving the United Nations Sustainable Development Goals in the future.*
>
> *However, current figures should be put into perspective: available data shows that even in the worst case (i.e. mining exclusively powered by coal), Bitcoin's environmental footprint currently remains marginal at best.*

It's a very involved debate indeed. Honey badger does not care. Honey what?

Bitcoin is called "honey badger of money", here is why[108]:

> *"It is primarily a carnivorous species and has few natural predators because of its thick skin, strength and ferocious defensive abilities. It is listed as the "world's most fearless animal" in the 2002 edition of the Guinness Book of World Records."*

2nd Coinbase link (different referral program)

https://genesis.re/ref/coinbase2
"Invite up to 4 friends to earn XLM too! They can be new or existing Coinbase users. You'll earn $10 in XLM for each eligible friend who completes a lesson."

I converted XLM to BTC, I'm the "maximalist" camp. YMMV - your mileage may vary..

American Express

https://genesis.re/ref/amex
You'll receive £30 cashback for your next approved friend.
Your friend will receive £25 cashback when they apply for the Platinum Cashback Credit Card, are approved and when they first spend over £1 on the Card.

Monzo

https://genesis.re/ref/monzo
Hey, I think you should get a Monzo account. Get one through this link and we'll both get £5!

TransferWise

https://genesis.re/ref/transferwise

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[108] https://en.wikipedia.org/wiki/Honey_badger

Free international transfer

AirBnb

https://genesis.re/ref/airbnb
When you sign up, you'll get £25 off your first home booking of £55 or more and £9 towards an experience of £36 or more.

Uber

https://genesis.re/ref/uber
£3 off first ride.

NOTE: you may want to find a more generous voucher elsewhere.

Booking.com

https://genesis.re/ref/booking
Get a £15.00 reward when you book your next trip using this code: 4D6BAEE8

Drivy

https://genesis.re/ref/drivy
Just rented car on Sunday, P2P car rental, much easier that heading to the airport to pick it up.

Moo

https://genesis.re/ref/moo
Take 25% off your purchase! Special thanks to your friend!

Luci Light (Amazon)

https://genesis.re/ref/luci
Luci Pro Outdoor 2.0

- waterproof
- dustproof
- camping
- romantic
- inflatable so does not take much space
- ethical, practical, sustainable
- TOP10 items you'd take to a remote island *(knife, rope, water container being TOP 3)*
- now it can even charge your phone!

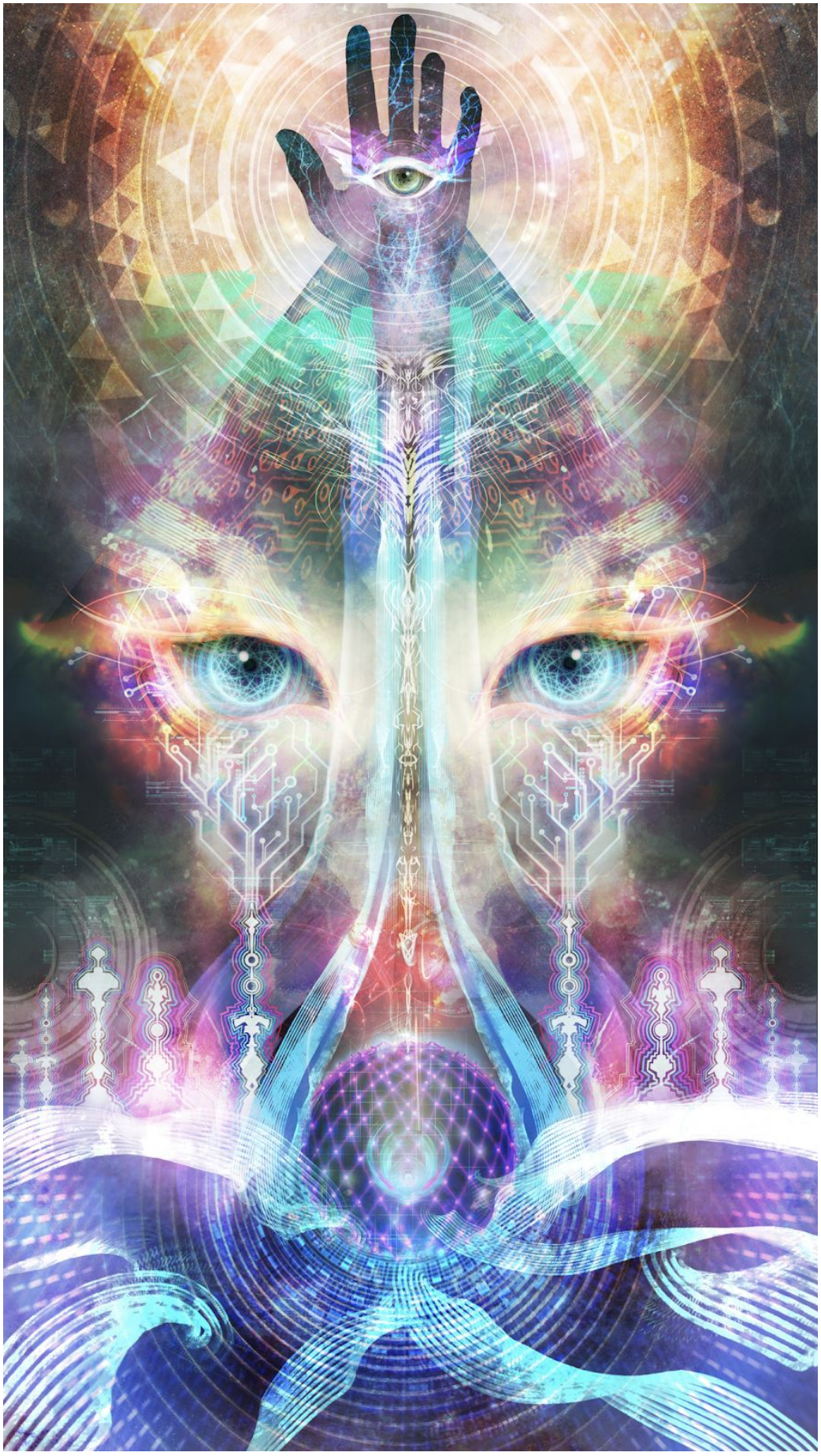
XR Handbook (Amazon)

https://genesis.re/ref/drill

Visionary artwork

If you like it, follow link: **https://genesis.re/artwork**

Talk to me about ERC-721 standard: http://erc721.org/



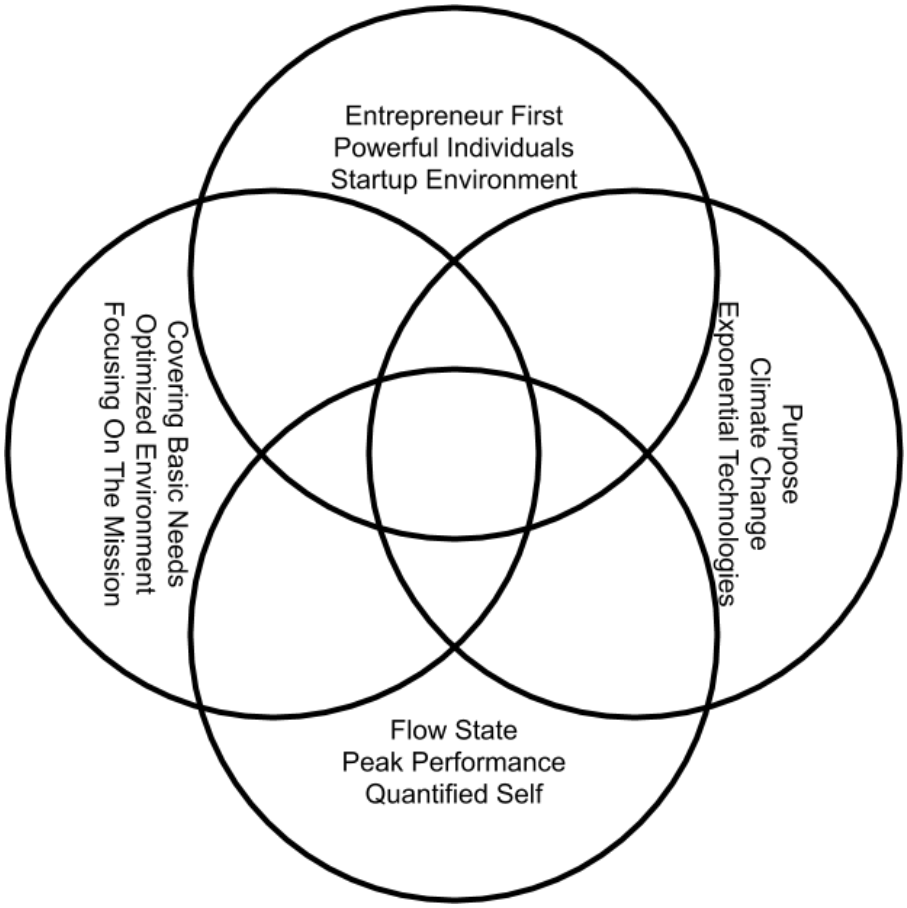
Hire me, work with me

Open for business, open for collaboration, open for consulting gigs: **email@genesis.re**

Why I need money (on top of paying mundane bills)

I saw an island for $1m[109] but then I realized - even if I had one million in cash, available to deploy right now it would be irresponsible to pull the trigger without a proper business plan. Because I was focusing energy on this book, I didn't have a chance to research the detailed numbers, here is just the summary.

"Realising human potential to heal the planet"



[109] https://www.privateislandsonline.com

It helps if you understand Entrepreneur First[110] vision - getting super smart people in the room and teaching them everything about startups, running a business, allowing these guys to mingle, form friendships and launch businesses.

It's pre-idea stage. The idea will come later, you'll have a chance to bounce all sorts of ideas with your peers, mentors, industry experts.

The trouble with London (and any other major city) is that there is a shortage of housing. If I was to relocate to a new city, it would definitely took some effort to find suitable accommodation.

Bureaucracy, paperwork, health & safety is pretty huge in the UK, to rent a place they usually want to do a reference check, guarantor, payslips (proof of work) and it can get rather complicated. If the goal of the program is to mingle with others, create a dedicated coworking coliving space.

We are doing something from scratch, the whole thing is designed for flow and human performance optimisation.

You can also think https://en.wikipedia.org/wiki/POC21_innovation_camp but on a permanent basis.

[110] https://en.wikipedia.org/wiki/Entrepreneur_First

Tried with astralship.org but I made a series of mistakes. In a way, I failed, but I did not give up. There is always another chance coming and this time around I'll be a little bit wiser.

Setbacks are the name of the game. I'm still alive, I'm still in the game.

Currently rebuilding myself, reestablishing my base and stability.

Let's be friends, let's be in touch: https://genesis.re

(I'm less focusing on social media but if you search for "Mars Robertson" you'll find me)

Share this book

In my version of reality[111], information always wants to be free.

Please share this book widely.

https://genesis.re/book

Image on the cover purchased from some website, just search for "blueprint earth"[112].

[111] Is there a such thing as universal truth?
[112] https://www.vectorstock.com/royalty-free-vectors/earth-blueprint-planet-vectors